February 1989

FINAL

ENVIRONMENTAL IMPACT REPORT

Addendum Volume 1: Executive Summary

1988 Revision to the Air Quality Management Plan

South Coast Air Quality Management District

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Executive Summary
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Environmental Impact Report
1988 Revision To The
Air Quality Management Plan

SCH No. 88021022

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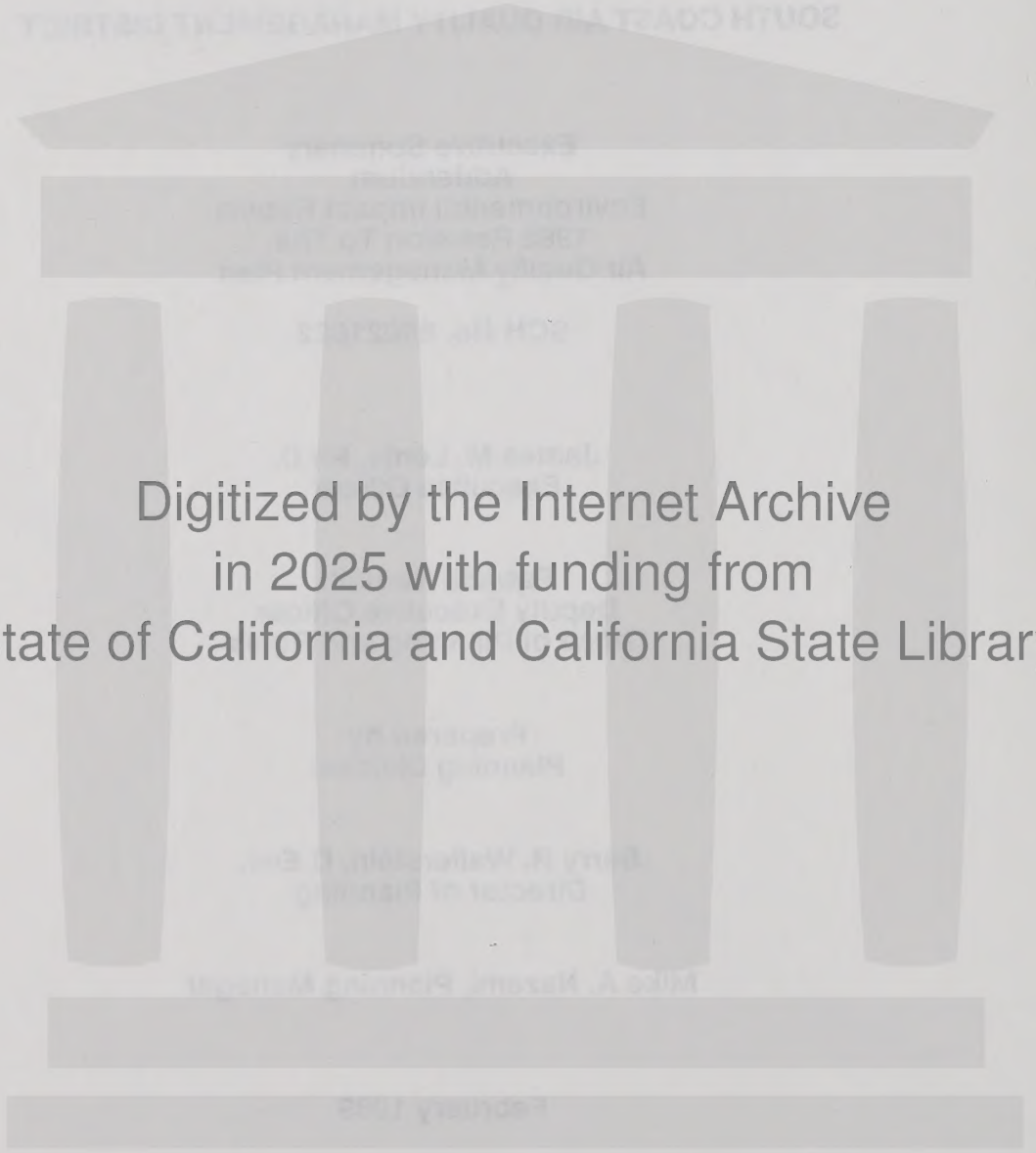

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Executive Summary
Addendum
Environmental Impact Report
1988 Revision To The
Air Quality Management Plan

SCH No. 88021022

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February 1989

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OVERVIEW

In response to one of the worst air quality problems in the nation, the South Coast Air Quality Management District (District) and the Southern California Association of Governments (SCAG) have developed the 1988 Revision to the South Coast Air Quality Management Plan (AQMP). The AQMP will serve as the regional guidance document that will enable the South Coast Air Basin (Basin) to attain all ambient air quality standards for criteria pollutants by the year 2007. The Plan consists of three tiers of measures that will be implemented over an eighteen year period to reduce emissions sufficiently to attain all federal criteria pollutant standards by 2007. More information on the tiers and individual control measures are provided in Section 4 of this summary and in the project description contained in the environmental impact report (EIR) released in December 1988.

The 1988 Revision to the Air Quality Management Plan is part of an ongoing planning effort required under Health and Safety Code Sections 40460 - 40470. Because the Plan is required under state and federal law to demonstrate attainment of all ambient air quality standards and because the air quality in the Basin is so poor, the AQMP is a long-range plan occurring over a 20 year time frame. The EIR for the AQMP uses the most accurate and up-to-date information available at this time. It is necessary to point out that it is difficult to quantify and analyze all environmental impacts that may occur as a result of implementing the AQMP because many of the control measures will be implemented in 5 - 20 years after AQMP adoption. To the extent possible, an analysis of projected impacts has been undertaken.

If adopted, the AQMP will be periodically reviewed and updated as required by Health and Safety Code Section 40463. This section requires that AQMPs be reviewed every two years, and revised as necessary "to reflect advances in technology, control strategies, and administrative practices." In addition, future Plan revisions will be subject to the requirements of Sections 40910 - 40926, added by AB 2595 (Sher), (Stats. 1988, ch. 1568, Sec. 11, p. 4405 et seq.). If, as a result of future review, alterations are made to the AQMP, appropriate California Environmental Quality Act (CEQA) compliance will be undertaken to analyze possible environmental impacts.

It is important to note that each control measure identified in the Plan is not self-implementing, but must be formally adopted through regulation or ordinance procedures by the implementing agency, either federal, state, or local. Typical adoption procedures require public notice and public hearings where evidence regarding the merits of each measure can be evaluated. Environmental assessment for each measure will occur prior to adoption or implementation, as required by CEQA. Any environmental assessments will discuss alternatives to the proposed project and mitigation measures to reduce or avoid any adverse environmental impacts identified.

Thus, the AQMP represents a blueprint for achieving healthful air quality, as mandated under state and federal law. The specific measures identified in the Plan represent conclusions based on the best judgement of the District, the Southern California Association of Governments, and the California Air Resources Board as the optimum method of attaining the health-based state and federal ambient air quality standards. If, as a result of periodic review, mid-course corrections need to be made, the AQMP has the necessary flexibility to allow such changes to be made.

PURPOSE AND AUTHORITY

The AQMP EIR is prepared in conformance with CEQA. The revision of the AQMP constitutes a "project" under CEQA. The purpose of the AQMP EIR is to inform the District Board, interested agencies and parties, and residents in the Basin of the environmental effects that would be caused by implementing the AQMP. The District Board's authority to adopt the AQMP is based on various legislation assigning the District responsibility for protecting and managing the Basin's air quality. Prior to making a decision on the Plan, the District Board must review and certify the Final EIR as providing adequate information on potential adverse environmental impacts. This is further discussed below.

TYPE OF EIR

CEQA created program EIRs to distinguish EIRs prepared for policy statements from those prepared for actual projects (Section 15168 CEQA

Guidelines). Program EIRs, in contrast to project-specified EIRs, examine the environmental impacts of a series of related actions including adoptions of broad policy programs. Program EIRs also discuss policy alternatives and mitigation measures as well as the cumulative impacts such alternatives and measures may cause when implemented (Section 15168 [b], CEQA Guidelines). The AQMP EIR is a program EIR as defined by CEQA because it examines a series of air quality improvement policies and the impact the implementation of those policies would have on the environment.

The level of detail to be included in a program EIR is addressed in the CEQA Guidelines which state "The degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR" (Section 15146). More to the point, the CEQA guidelines also indicate that a program EIR should focus primarily on the general environmental effects that can be expected to result from plan adoption, leaving more detailed analysis to be completed in conjunction with project specific EIRs. Because the level of information regarding potential impacts from control measures recommended in the AQMP is very general at this time, the environmental impact forecasts are, of necessity, also general or qualitative in character. In certain instances, such as with future ambient air quality concentrations, impacts are quantified to the degree feasible.

The program EIR also plays an important role in establishing a structure within which future CEQA reviews of specific control measures can be effectively conducted. The AQMP Program EIR focuses subsequent environmental review on relevant control measure implementation issues. This concept of covering general matters in the Program EIR with subsequent narrower EIRs for specific projects and with incorporation by reference of the general discussion is known as "tiering" (CEQA, Section 15385). Based on the text in the program EIR or its appendices, many issues can be eliminated from further consideration in measure-specific EIRs. The EIR program will provide the basis for staff's use in future Initial Studies, for identifying relevant issues and determining significance, and will allow the project-specific EIRs to be focused solely on the new effects or detailed environmental issues not previously considered (CEQA Guidelines & 15168 [d]).

SCOPE OF EIR AND ORGANIZATION

Because the control measures recommended in the AQMP pose pervasive changes in the Basin's environment, the District prepared a comprehensive EIR, that is, all environmental issues have been evaluated. When presented to the District Board for certification, the Final EIR will consist of the following components.

1. December 1988 EIR
2. Addendum, including the Executive Summary and Responses to Comments
3. All Appendices
4. Staff report, including summaries, findings and Statement of Overriding Considerations (to be issued on March 17, 1989)

SECTION 2

ENVIRONMENTAL SETTING

Summary of Current Environmental Setting
Summary of Future Environmental Setting

SUMMARY OF CURRENT ENVIRONMENTAL SETTING

Knowledge of the regional setting of a project is critical when assessing the project's environmental impacts (CEQA Section 15125 (a)). The description of the environmental setting in the area of the project, should include not only the natural setting such as flora, fauna, aquatic systems, etc., but also the topics related to regional plans such as area-wide waste treatment, water quality, regional transportation plans, etc. Below is a summary of the current environmental setting topics appearing in Chapter 3 of the December 1988 AQMP EIR.

Climate is an important parameter affecting air quality in the Basin. Basin climate is characterized by warm summers, mild winters, infrequent rainfall, moderate daytime onshore breezes, and moderate humidities. During winter nighttime and early morning hours, temperature inversions occur close to ground level. The combination of low temperature inversions, meteorological conditions (such as light winds and shallow vertical mixing) and topographical features (such as the surrounding mountain ranges) hinder the dispersal of air pollutants, thus contributing to poor air quality. Out of all national ambient air quality standards, which are based upon known health effects, the Basin complies with only two, those for lead and sulfur dioxide. These standards were established to protect public health with a margin of safety.

In 1987, nitrogen dioxide (NO_2) levels exceeded the federal standard at 2 of 20 monitoring locations, both in Los Angeles County. District staff estimate that it will require nearly 10 years to attain this standard. For 1987, the annual average PM_{10} (particulate matter less than 10 micrometers in diameter) concentrations were nearly twice the annual federal standard. Because PM_{10} levels are so high, the Basin has been classified by the EPA as a PM_{10} Group I area, which is a designation for areas with a greater than 95 percent chance of <u>not</u> complying with the federal PM_{10} standard. In the summer, the longer daylight hours and plentiful sunshine provide the energy needed for the photochemical reactions between oxides of nitrogen (NO_x), reactive organic gases (ROG), and other emissions, thus contributing to higher ozone levels. Ozone levels in the Basin are nearly three times the federal standard. Between 1984 and 1986, the ozone standard was exceeded

an average of 140 days per year in the Basin. Carbon monoxide (CO) levels are approximately twice the federal standard. For the years 1983 and 1984, exceedances occurred on the average of approximately 60 days per year. Table 2-1 below summarizes 1985 emission levels for each of the pollutants that contribute to exceedances of air quality standards.

TABLE 2-1

Summary of Emissions: Year 1985 Baseline
South Coast Air Basin
(tons/average annual day)

SOURCE CATEGORY	ROG	NOx	SOx	CO	PM*	PM10*
Stationary Sources	590	285	56	190	1,548	679
Mobile Sources	656	755	65	5,240	97	62
Total	1,246	1,040	121	5,430	1,645	741

*PM and PM10 emissions from paved road dust are listed under stationary sources.
Source: 1988 AQMP, Chapter 3.

One contributing factor to poor air quality is the rapid population increase that has occurred in the Basin since the end of World War II. Until approximately 1980, migration into the Basin was the most important contributor to Basin population growth. Since 1980, natural increase (births minus deaths) has been a slightly more important component of population increase, contributing approximately 56 percent to the population increase. As of 1984, the total Basin population consisted of approximately 11,196,000 individuals.

Between 1972 and 1984, the Southern California economy experienced a period of rapid growth. Total employment in the Basin increased from an annual average of 5,354,700 at the time of the 1980 census to 5,673,000 in 1984, a net increase of 318,300 jobs. During this period the Basin economy began a transition from a goods producing manufacturing economy to an information based service economy, bi-polar in nature. For example, there has been growth in the low-skill, low-wage sector and in the high-skill, high-

wage sector, while the middle-skill, middle-wage sector has experienced moderate growth or declines in some areas.

The remainder of the current environmental setting can be divided into two major sections, natural environmental setting and topics related to regional plans. The natural setting topics include brief summaries of the following areas: geology of the Basin including soil characteristics; ground and surface water data; and the ecology of marine and terrestrial environments. Summaries of issues related to general plan topics include: water supply systems, waste water facilities (publicly owned treatment works); solid waste disposal facilities; characteristic land use in the Basin; housing, which includes number of houses and average household size for each Basin county; major energy suppliers, both gas and electric; public services; and transportation services in the Basin.

SUMMARY OF FUTURE ENVIRONMENTAL SETTING

In order to evaluate the impact of the Air Quality Management Plan on the South Coast Air Basin, the implications of not adopting the Plan must be considered. Below is a summary of the topics presented in Chapter 3 of the December 1988 AQMP EIR which describes the future environmental setting of the Basin in the year 2010.

Forecasted baseline emissions for both stationary and mobile sources are estimated assuming that current socioeconomic trends for the Basin will continue but that there will be no air pollution control efforts other than those already in place as of 31 December 1987. Under these conditions, there will be a net decrease of 15 to 30 percent in emissions of reactive organic gases, oxides of nitrogen, and carbon monoxide between the years 1985 and 2000. However, the baseline emission levels for all four of these criteria pollutants will rise between the years 2000 and 2010 by 5 to 15 percent. Table 2-2 shows projected emissions in the year 2010.

TABLE 2-2
Summary of Emissions: Year 2010 Baseline
South Coast Air Basin
(tons/average annual day)

SOURCE CATEGORY	ROG	NOx	SOx	CO	PM*	PM10*
Stationary Sources	699	271	71	205	2,298	1,006
Mobile Sources	431	746	69	4,262	128	71
Total: All Sources	1,130	1,017	140	4,467	2,426	1,077

*PM and PM10 emissions from paved road dust are included under stationary sources

SCAG's regional baseline projection was used to predict levels of growth in population, employment and housing in the South Coast Air Basin, as indicated in Table 2-3. The baseline projection extrapolates from demographic and economic trends of the last decade and assumes that no new governmental policies that affect these trends will be implemented. SCAG predicts that the net population in the Basin will increase between the years 1984 and 2010 by 43 percent to 16.1 million (SCAG, 1988). This corresponds to an average annual growth rate of 2.1 percent. Most of the Basin's population will continue to reside in Los Angeles County; however, the populations of Riverside and San Bernardino Counties will have more than doubled by the year 2010.

TABLE 2-3
Forecasted Population of the Basin
For the Year 2010

County	Population	Percentage Of Population	Percentage Increase Over 1984 Levels
Los Angeles	9,948,000	62	27
Orange	3,050,000	19	48
Riverside	1,400,000	9	161
San Bernardino	1,748,000	11	139
Basin Total	**16,146,000**		**43%**

Most (56 percent) of the recent growth in population for the Basin was caused by natural changes (births minus deaths) rather than by net migration (immigration minus emigration). In the future, natural population increases will become progressively more important, accounting for three fourths of net population growth by the year 2010 (SCAG, 1987).

A significant number of cities and counties within the Basin have considered or are now investigating measures to control and/or limit population changes within their jurisdiction. Existing and proposed control measures focus on limiting housing availability or setting employment and retail space limits. The enforceability of these local growth initiatives and their long-term impact for the region are not known at this time. It is assumed that isolated growth control initiatives will not alter the region's overall growth rate.

Regional employment is forecasted to include 8.9 million jobs by the year 2010 (SCAG, 1987), reflecting an annual growth rate of 2 percent. Los Angeles County will have the lowest growth rate (1 percent) in the Basin, due to its already large employment base. Total employment in Orange, Riverside, and San Bernardino Counties will each increase by more than 3 percent annually leading to a more even distribution of employment and economic benefits throughout the Basin. The current trend in the Basin toward a service-based economy and away from a manufacturing-based economy is projected to continue at least until the year 2000 (SCAG, 1987). By 2010, 29 percent of the labor force will be employed in the service sector and 17 percent in manufacturing.

The Basin's housing stock is expected to increase 52 percent by 2010 due to population growth and diminishing household size. Housing growth in the Basin will gravitate toward areas where land and development costs are minimized.

The Metropolitan Water District estimates that water demand in the Basin will grow by 24 percent between 1990 and 2010. The increased demand for water from population growth is expected to be offset in part by water conservation efforts. Conservation programs by water agencies include lining canals to reduce seepage, leak detection programs in water mains, and promotion of water saving practices and devices among consumers.

SECTION 3

PROJECT DESCRIPTION

Geographic Area of the Project
Historical Context of the AQMP
Objectives of the Project
Components of the AQMP

GEOGRAPHIC AREA OF THE PROJECT

The AQMP applies to a 6600 square mile area identified as the South Coast Air Basin (Basin), which contains all of Orange County and the non-desert portions of Los Angeles, San Bernardino and Riverside Counties. The Basin is bounded by the Pacific Ocean on the west, San Diego County on the south, and the San Gabriel, San Bernardino and San Jacinto mountains to the north and east.

Air modeling for the region was done covering the South Coast Air Basin and some areas outside the Basin. The Ventura County and the Southeast Desert Air Basins (SEDAB) in San Bernardino and Riverside Counties are included in the modeling, but are not incorporated into the AQMP.

The use of the larger modeling region shows that impacts of AQMP implementation extend well beyond the defined South Coast Air Basin. The impacts and mitigation measures discussed in this EIR are not limited to areas within the SCAB, but extend beyond the boundaries into the adjoining air basins. Measures to mitigate impacts for these areas were recommended to the responsible agencies having jurisdiction over those areas outside the SCAB.

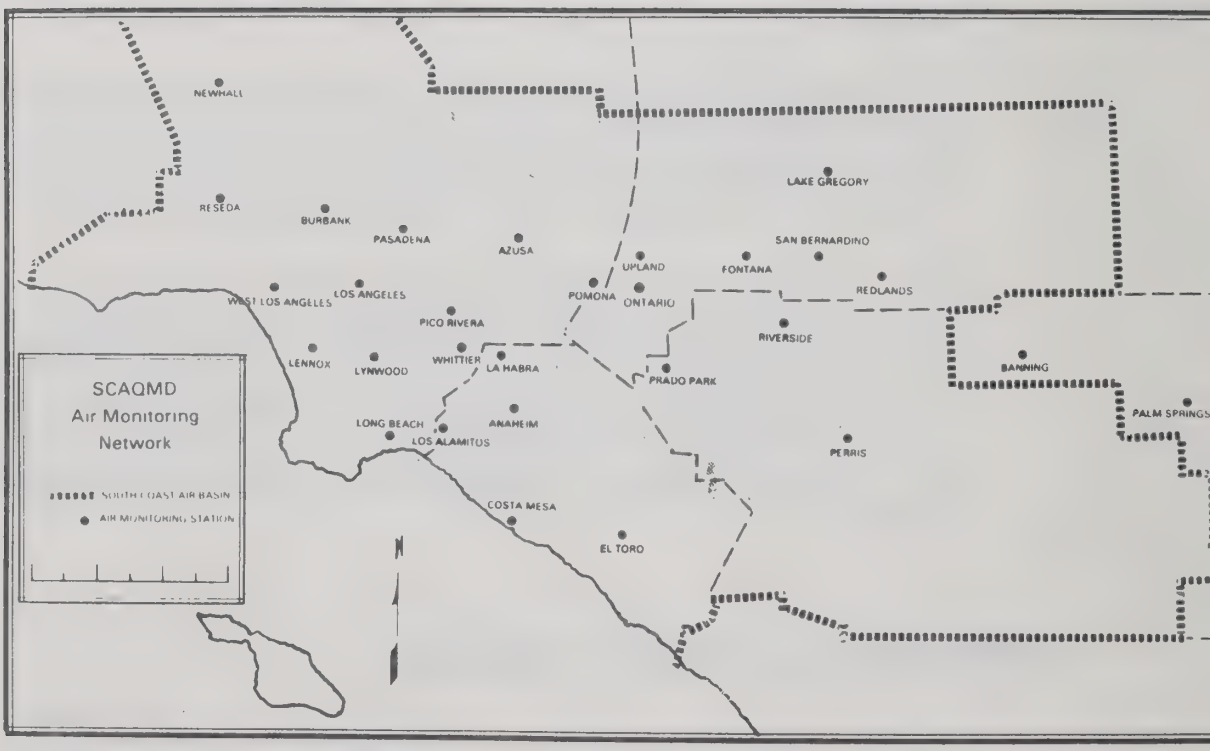
HISTORICAL CONTEXT OF THE AQMP

In 1976, the Lewis Air Quality Act established the four-county South Coast Air Quality Management District. The boundaries of the District are depicted in Figure 1. The Lewis Act also required preparation of an Air Quality Management Plan that would be consistent with federal planning requirements. In 1977, amendments to the federal Clean Air Act established local air quality planning processes for those local areas that had not reached attainment of federal ambient air quality standards. The first AQMP was prepared by the District in 1979. This is currently the only federally approved AQMP for the region.

The AQMP was revised in 1982 to reflect better data and improved modeling tools. However, in 1987 the federal court ordered the EPA to disapprove the 1982 AQMP Revision because it did not comply with federal standards.

Figure 3-1

Boundaries of the South Coast Air Basin



OBJECTIVES OF THE PROJECT

The primary objective of the AQMP is to establish a comprehensive strategy to attain compliance with both federal and state ambient air quality standards by the year 2007 for six air contaminants: sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and fine particulate matter. The Basin is currently in compliance with the lead and sulfur dioxide standards, but exceeds the others.

California has also set additional standards for ethylene, hydrogen sulfide, sulfates, visibility, and vinyl chloride. All but sulfates and visibility are primarily localized problems, which are to be handled through District permit requirements. The visibility and sulfate standards have been addressed in the AQMP through control programs for ozone, nitrogen dioxide, carbon monoxide, and fine particulate matter.

This EIR is prepared as a full disclosure of the general environmental assessment of the AQMP implementation and contains proposed mitigation measures for dealing with potentially significant adverse environmental impacts.

COMPONENTS OF THE AQMP

The AQMP contains strategies designed to meet ambient air quality standards in the Basin by the year 2007. These strategies were developed by identifying potential control measures. Based upon their readiness for implementation, the control measures were further categorized into three tiers organized according to increasing level of difficulty, availability and technology to implement them. The three tiers are the key mechanisms to meet the emission reduction goal of the AQMP and are described below:

Tier I - Full-Scale Implementation of Known Technology

Tier I strategies call for the aggressive implementation of known technologies in a traditional regulatory framework. Tier I strategies are to be adopted within the next five years by implementing the following goals:

Minimize the use of pollutant-emitting materials;

Maximize the substitution of non-polluting or less-polluting materials;

Maximize the use of the most efficient pollution control devices for emission control;

Maximize compliance and maintenance programs for fugitive emission control;

Maximize the effectiveness of existing measures through administrative procedures.

Detailed documentation of the control measures is provided in Appendices IV-A and IV-E through IV-G of the AQMP. The emission control measures are organized into two basic types -- (1) stationary and (2) mobile (transportation) source control measures, respectively. These classes of control measures are further subdivided into the specific categories as follows:

Stationary Source Control Measures

1. Surface Coating and Solvent Use
2. Petroleum and Gas Production and Distribution
3. Industrial and Commercial Processes
4. Residential and Public Sectors
5. Agricultural Processes, and
6. Others

Mobile (Transportation) Source Control Measures

1. Motor Vehicles control measures
2. Transportation Systems and Land Use
3. Off-Road Vehicles control measures

Tier II - Significant Advancement of Technology and Regulatory Intervention

Further advancement and regulatory intervention will be employed when necessary to expedite commercialization of new products and to eliminate future emission growth. Tier II strategies are designed to meet the following goals:

Extending and expanding current technological applications beyond the levels traditionally pursued;

Developing strong public and private commitments when significant infrastructure changes are required;

Introducing active regulatory intervention through technology-forcing standards or emission fees.

Detailed descriptions of the proposed measures are provided in AQMP Appendix IV-A. They are divided into three basic types as listed below.

1. **Transportation Source Controls,**
2. **Surface Coating and Solvent Use Goals**
3. **Goals for All Sources**

Tier III - Major Technological Breakthroughs

Tier III will require major technological breakthroughs and changes in infrastructure in order to be fully implemented by 2007. These strategies would result in:

Virtual elimination of emissions from surface coating and solvent use;

Virtual elimination of fuel combustion emissions from all automobiles, and light- and medium-duty trucks; and

Low-emitting technologies for all remaining vehicles.

These emission reduction goals can be realized in the following ways:

1. **Surface Coating and Solvent Use**

2. **Extremely-low Emitting Passenger Vehicles**

3. **Low-emitting Heavy-duty Vehicles**

All measures proposed in the AQMP are needed to meet the attainment goals. However, many factors can affect realization of the expected emission reductions. Therefore, should certain control measures in the Plan fail to be implemented or not be as effective as expected, additional emission reductions will be needed. Detailed discussion of the contingency measures are provided in Appendix IV-A of the AQMP.

The individual control measures are described in detail in Appendices IV-A and IV-E through IV-G of the AQMP. The projected emissions reductions for the two major classes of control measures for each of the three tiers are summarized in Tables 3-1, 3-2, and 3-3. Table 3-4 presents the total AQMP projected emissions reductions.

TABLE 3-1
Summary of Tier I Emission Reductions
And Emission Inventory

Sources	Pollutants (Tons/Day) ROG	NOx	CO	SOx	PM
		Year 2010			
Baseline Emissions	1130	1017	4467	142	2426
		Tier I Emission Reductions			
Stationary	381	188	92	43	1075
Transportation	236	397	2775	34	49
Total	617	585	2867	77	1112
		Year 2010 Remaining			
Emissions After Tier I	513	432	1600	65	1314

TABLE 3-2
Summary of Tier II Emission Reductions
And Emission Inventory

Sources	Pollutants (Tons/Day) ROG	NOx	CO	SOx	PM
		Year 2010			
Baseline Emissions	513	432	1600	65	1314
		Tier II Emission Reductions			
Stationary	133	25	15	6	208
Transportation	15	82	305	10	4
Total	148	107	320	16	212
		Year 2010 Remaining			
Emissions After Tier II	365	325	1280	47	1102

TABLE 3-3
Summary of Tier III Emission Reductions
And Emission Inventory

Sources	Pollutants (Tons/Day) ROG	NOx	CO	SOx	PM
		Year 2010			
Baseline emissions	365	325	1280	47	1102
		Tier III Emission Reductions			
Stationary	107	2*	2*	3*	2*
Transportation	76	119	1094	14	5
Total	183	121	1096	17	7
		Year 2010 Remaining			
Emissions After Tier III	182	204	184	32	1095

*Emission reductions are due to controls on transportation sources.

TABLE 3-4
AQMP Emissions Reduction Summary
(tons per day [t/d])

Control Category	NOx	SOx	CO	ROG	PM
Stationary Sources	215	52	109	621	1273
Transportation Sources	598	58	4174	327	58
Total Sources	**813**	**110**	**4283**	**948**	**1331**

SECTION 4

PROPOSED PROJECT ALTERNATIVES

Introduction

INTRODUCTION

CEQA requires that an EIR contain a reasonable range of alternatives to the project. Any alternative should include realistic measures for attaining the basic objectives of the project and provide a means for evaluating the relative merits of each alternative. The specific alternative of "no project" must also be evaluated. The range of alternatives required in an EIR are those necessary to permit a reasoned choice, and need not include every conceivable project alternative (McCutchen et al., 1988).

An expanded discussion of the nine alternatives presented in the December 1988 EIR, including a "no project" alternative, are presented in this addendum. These alternatives are evaluated according to whether the basic goal of complying with all state and federal ambient air quality standards can be attained within a reasonable time frame. The different alternatives include variations of specific control measures presented in the AQMP; in some cases alternatives contain some of the same control measures, but implementation schedules may differ. Below is a brief description of each of the nine alternatives and their environmental implications. These alternatives and potential environmental impacts and proposed mitigation measures are discussed in more detail in Section 5.

ROG Primarily Alternative A (SCE)

This alternative was originally proposed by the Southern California Edison Company (SCE) as a "Cost-Effective/Early Attainment Alternative," and was submitted as part of their comments on the AQMP DEIR. This alternative incorporates a large portion of the emission control measures proposed for the AQMP. However, this alternative differs from the AQMP in that it places greater emphasis on ROG emissions reductions and less emphasis on control of other pollutants. More specifically, this alternative would have 52 fewer Tier I control measures; it includes 8 ROG only Tier II control measures, and it proposes no Tier III control measures.

District staff have mathematically modeled future air quality that would result from implementing SCE's proposed alternative. The modeling results indicate that, by itself, this alternative will not result in attainment of the state and federal ambient air quality standards for ozone, NO_2, PM_{10}, or CO. For example, District modeling indicates that the SCE alternative will ultimately achieve an ozone level of 13.7 - 15.6 pphm. The standard for ozone is 12 pphm. The AQMP is expected to reduce ozone levels sufficient to meet the federal ozone standard (i.e., 12.6 pphm which is within modeling detectability of 12.0 pphm). With this alternative, the Basin would continue to be in compliance with the state and federal ambient air quality standards for SO_2 and lead.

Because the SCE alternative deletes specific control measures as compared to the AQMP, the overall potential environmental impacts associated with implementing this alternative may be less significant than those associated with the AQMP. A discussion of various environmental impacts by topic is included in Section 5.

ROG Primarily Alternative B (WSPA)

The ROG Primarily Alternative B was originally submitted to the District by the Western States Petroleum Association (WSPA), formerly known as the Western Oil and Gas Association (WOGA), as part of their comments on the AQMP DEIR. WSPA also presented this alternative at a subsequent public workshop. This alternative, like the SCE alternative discussed above, incorporates many of the emissions control measures proposed by the AQMP. Similar to the SCE alternative, it differs from the AQMP in that it proposes fewer emissions control measures. In addition, this alternative proposes modified versions of emissions control measures presented in the AQMP and proposes a number of original emissions control measures.

The WSPA alternative, like the SCE alternative, relies heavily on ROG emissions reduction measures and places less emphasis on control of other criteria pollutants, most notably NO_x. Specifically, this alternative would exclude 27 Tier I control measures proposed in the AQMP; it proposes modifications to three emissions control measures proposed by the AQMP, and adds additional emissions control measures. This alternative excludes all Tier II emissions control measures except for the control measure specifically

requiring a 50 percent ROG reduction in solvents and coatings. Finally, this alternative omits all Tier III control measures.

As for the SCE alternative, District staff have modeled the future air quality in the Basin that would result from implementing the WSPA alternative. As indicated in Section 5, the WSPA alternative is slightly superior to the SCE alternative because it ultimately attains the standards for CO and results in a lower ozone level, 13.2 - 14.9 pphm. However, it still does not attain the state and federal standards for ozone, NO_2 or PM_{10}. With this alternative, the Basin would continue to be in compliance with the standards for SO_2 and lead.

Since this alternative proposes fewer emission control measures than the AQMP, if implemented, it may result in fewer environmental impacts. A complete discussion of potential environmental impacts by topic can be found in Section 5.

Implement Tiers I and II Only Alternative

This alternative is identical to the proposed AQMP except it excludes all Tier III emissions control measures. This alternative would not require the technological advancements necessary to implement Tier III emissions control measures.

District modeling of this alternative indicates that, by the year 2010, the Basin will attain all federal and state standards for CO and NO_2. In addition, the Basin would attain the federal PM_{10} standards, but would fail to attain the state PM_{10} standards. The Basin would remain in compliance with the state and federal ambient air quality standards for SO_2 and lead, but would remain a nonattainment area for ozone, achieving an ozone level of 16.6 pphm (the federal standard is 12 pphm).

The environmental impacts associated with implementing this alternative would be the same as those impacts resulting from the AQMP, except that the impacts associated with Tier III emissions control measures would be avoided. These avoided impacts include any of those resulting from large-scale low-emitting technologies, and exclusive use of nonreactive solvents. The specific environmental impacts resulting from this alternative are described by topic in Section 5.

The costs associated with implementing Tier III emissions control strategies are potentially more profound than costs associated with implementing Tier I and Tier II emissions control measures. The actual costs of implementing Tier III control measures cannot accurately be predicted because these control measures rely on currently unavailable technologies. An accurate comparison of costs between this alternative and the other alternatives cannot be made because of the unknown costs associated with Tier III emissions control measures.

Implementation of Least-Cost Measures Only Alternative

This alternative differs from the alternatives discussed thus far in that it takes a cost approach to controlling emissions rather than a technology or emissions limit approach. The procedure for implementing this alternative begins by ranking all emissions control measures identified by the AQMP in ascending order according to cost. The control measures would then be implemented, starting with the least costly control measure, until all air quality standards are attained or until a predetermined total maximum cost level is reached.

One of conclusions of the proposed AQMP is that all component emissions control measures are necessary to attain all state and federal ambient air quality standards. If this is actually the case, then this Least-Cost Alternative would be identical to the AQMP unless the predetermined costs allowed for implementation and substantially less than the projected costs of implementing the AQMP. If, as a result of implementing the Least-Cost Alternative, all control measures are imposed, then this alternative should attain all of the state and federal ambient air quality standards.

If a predetermined cost limit is set, then all emissions control measures proposed by the AQMP may not be implemented, resulting in an emissions reduction shortfall related directly to the cost level selected. For the purpose of analysis, this alternative sets a cost effectiveness level identical to upper-bound cost limits established in the current District Best Available Control Technology Guidelines. The emissions control measures adopted under this scenario, and their costs, are given in detail in Section 5.

For the purpose of discussion of environmental impacts, it will be assumed that emissions control measures are implemented until the cost guidelines described above are achieved. For this scenario, it is estimated that all Tier I and most Tier II emissions control strategies would be implemented. This alternative would have nearly identical environmental impacts as the Implement Tier I and Tier II Only Alternative.

Delayed Compliance Alternative

This alternative is identical to the proposed AQMP, except that this alternative allows a longer time frame for implementing emissions control measures. For analytical purposes, the date projected for compliance with all state and federal ambient air quality standards would be delayed until either 2017 or 2027.

No air quality modeling has been performed for this alternative because there are currently no reliable population, land use, or emissions forecasts beyond 2010. Contributing to this uncertainty, unknown advances in control technology and unforeseeable socioeconomic or environmental changes may significantly affect projections.

Since this alternative assumes that all emissions control measures proposed in the AQMP will eventually be implemented, potential environmental impacts resulting from this delayed compliance alternative should be similar. However, because of the uncertainties associated with this alternative, described above, the environmental impacts analyzed are uncertain and the actual impacts are unknown.

The actual costs of implementing this alternative are difficult to predict because of the uncertainties describe above. It is possible that the longer time period for implementing this alternative may allow individuals and businesses to absorb costs more easily because they would have more time to make economic adjustments and amortize equipment.

Alternate Growth Scenario

The Alternative Growth Scenario option is similar to the AQMP except that it forecasts impacts based on different population, land use, and employment projections. This alternative is base on various growth alternatives developed by the SCAG that are published in the Growth Management Plan and Environmental Impact Report (SCAG, 1988a). In general, the different population growth forecasts predict similar total growth in the Basin; however, they differ in that the growth predicted within the region is distributed differently.

Air quality modeling for this alternative has not been done because the total regional population forecasts are equivalent to the population forecasts used for the AQMP. Therefore, it is assumed that all air quality objectives attained by the AQMP will also be attained by this alternative. Further, it is assumed that all of the potential environmental and socioeconomic impacts of this alternative will also be similar to those described for the AQMP, although relative impacts may vary at the subregional or local level.

Alternative Mobility Scenario

Like the Alternative Growth Scenario Alternative discussed above, the Alternative Mobility Strategy is a variation of the AQMP using an alternative regional mobility plan. This variation is based on an alternative population estimate developed by SCAG and described in the Regional Mobility Plan and Environmental Impact Report (SCAG, 1988b). Like the previous alternative, the total population growth projected by this alternative is not significantly different from the population growth forecasts used for the AQMP. The primary difference is the variation in the allocation of regional growth.

The preceding SCAG report (1988b) also contains an extensive discussion of the environmental impacts associated with the Alternative Mobility Strategy Alternative. Essentially, the potential environmental and socioeconomic impacts resulting from this alternative are projected to be similar to those resulting from implementing the AQMP, although specific impacts may vary at the subregional or local level.

Additional Control Effort Alternative

This alternative differs from the preceding alternatives in that it requires additional emissions control efforts beyond those proposed in the AQMP. The intent of this alternative is to attain the state and federal ambient air quality standards with a greater margin of safety than would be achieved by the AQMP. This alternative would contain new emissions control measures in the event that the AQMP is not as effective as anticipated.

Since this alternative requires additional criteria emissions controls, it is anticipated that all state and federal ambient air quality standards would be attained. However, the actual emissions reductions for this alternative have not been estimated. Therefore, the potential air quality benefit, -- the margin by which the clean air standards may be surpassed, -- is unknown.

Implementing this alternative may result in more significant impacts, or a greater number of impacts than would occur from implementing the AQMP. The reason for this is that a greater number of emissions control measures may be implemented, and/or currently proposed control measures may become more stringent, thus consuming more natural resources. In addition, because of the increased cost of additional control measures required by this alternative, there is a greater possibility that economic impacts generating secondary environmental impacts such as increased costs of operating a business in the Basin, would result in a relocation of a sector of the business community (as well as jobs) outside of the Basin. A more complete discussion of environmental impacts can be found in Section 5.

No Project Alternative

If neither the AQMP nor any of the preceding alternatives are adopted, the No Project Alternative would then be in effect. Allowing this alternative to go into effect implies that the 1979 version of the AQMP would then be enforced. This is because the 1982 revision of the AQMP was disapproved by the EPA for not projecting compliance with any of the state and federal ambient air quality standards. However, since the 1979 version of the AQMP contains obsolete information, it is likely that the EPA would disapprove this document as well.

If the District allows the No Project Alternative to occur, air quality could still improve to a certain extent if SCAG adopts both the Growth Management Plan (SCAG, 1988a) and the Regional Mobility Plan (SCAG, 1988b), both of which contain a number of policies and actions that may improve air quality. However, without an air quality management plan that demonstrates compliance with all state and federal ambient air quality standards, the EPA is empowered by the Clean Air Act (CAA) to implement sanctions against nonattainment areas.

The EPA is currently in the process of preparing a Federal Implementation Plan (FIP) in response to a judgment against the District because of failure to attain the federal ambient air quality standards by the Clean Air Act deadlines. The control measures contained in the FIP are unknown at this time, but in a recent Federal Register notice the EPA indicated that it is considering a FIP with control measures more stringent than those contained in the proposed AQMP. One consequence of the No Project Alternative is that the District would not have a plan that would serve as a model for the FIP.

The No Project Alternative would avoid the environmental impacts associated with the AQMP and all of the preceding alternatives. However, air quality in the Basin would not improve and would probably deteriorate because of the anticipated population growth in the Basin. Impacts of a similar No Project Alternative are discussed by SCAG (1988a). Finally, this alternative would avoid many of the costs associated with the AQMP or any of the other alternatives.

Feasible and Environmentally Superior Alternatives

The CEQA Guidelines require an EIR to identify project alternatives that can feasibly attain the basic objectives of the project and identify an environmentally superior alternative from the alternatives identified in the EIR. The objectives of the AQMP are to develop a comprehensive control program that will ultimately bring the Basin into compliance with all state and federal ambient air quality standards, at the earliest achievable date, but no later than December 31, 2007.

Detailed modeling conducted by the District demonstrates that only the proposed AQMP, the AQMP variations (see preceding sections), and the Additional Control Effort Alternative can meet the mandated requirements for an AQMP. These alternatives, with the exception of the Additional Control Effort Alternative, have equivalent environmental impacts because they are variations of the AQMP with slightly different implementation policies. They have all of the same control measures and all would bring the Basin into compliance with all ambient air quality standards. The Additional Control Effort Alternative would also bring the Basin into compliance with all relevant ambient air quality standards, but at a greater cost and possibly with more numerous or more significant environmental impacts. All of these alternatives are feasible environmental alternatives.

All of the remaining proposed alternatives, the ROG Primarily Alternative A, the ROG Primarily Alternative B, and the No Project alternative fail to bring the Basin into compliance with state and federal ambient air quality standards. The inability of these alternatives to attain the project goals, renders them infeasible.

SECTION 5

IMPACTS OF ADOPTING THE PROPOSED AQMP

Introduction

INTRODUCTION

CEQA (Section 15126 (a)) requires EIRs to identify and discuss environmental effects that may result from a proposed project. The discussion of environmental impacts should include information relevant to the environmental impacts identified for the project. Such information may include, but is not limited to, resources involved, physical changes, alterations to ecological systems, health and safety problems caused by physical changes, scenic quality, public services, etc.

Some of the most prevalent types of potential environmental impacts identified that may result from implementing the AQMP include impacts from air pollution control equipment and/or secondary cross-media impacts in which a pollutant is removed from the air and then is converted into either an aqueous (water-borne) waste or is converted into a solid waste that must be destroyed or disposed of in an appropriate landfill. Aqueous wastes must receive further treatment to remove the pollutant so it can then be destroyed or disposed of in an appropriate landfill.

The environmental impacts identified in the December 1988 EIR have been discussed on a level consistent with the specificity required by a program EIR (see Section 1 above). However, as specific control measures are brought forward for rule development, an analysis of the environmental impacts identified in this document, as well as other potential impacts that may arise, will be analyzed on a level that is appropriate for a more focused project. Therefore, a more focused analysis in the future may alter some of the conclusions drawn in this document. The sections below briefly summarize by topic the potential impacts, as currently identified, that may result from implementing the AQMP.

Air Quality Impacts

The primary goal of the AQMP is to reduce criteria pollutant levels in the Basin in order to attain and maintain the state and federal ambient air quality standards, thus protecting public health with a margin of safety. The

District has modeled the air quality effects of implementing all emissions control measures proposed in the AQMP, and projections indicate that the Basin will comply with all state and federal ambient air quality standards by 2010. Although the proposed AQMP should bring the Basin into compliance with all ambient air quality standards, several potential secondary air quality impacts were identified. It is important to emphasize that, in spite of these secondary air quality impacts, the net effect is that the Basin will attain all ambient air quality standards.

Numerous types of control equipment identified in the AQMP may generate air quality impacts. For example, several types of emission control equipment require a combustion source to either destroy the captured pollutants, eg., thermal incinerators, or use the heat from a combustion source to remove the pollutant from the equipment, eg. steam regeneration of carbon used in carbon adsorption devices. These combustion sources may produce CO, NO_X, particulates, and unburned hydrocarbons that contribute to ROG.

In addition to criteria pollutant emissions, the AQMP may contribute to negative health impacts resulting from emissions of toxic substances. For, example, as a result of NO_X reduction control measures, ammonia, which is a toxic substance, may be emitted from selective catalytic reduction devices. Methanol, an extremely low-emitting fuel, may create negative health impacts because one of its combustion products is formaldehyde, also a toxic substance. Finally, industries affected by low-ROG solvent control measures may switch to low-ROG solvents that have their own inherent health risks.

Water Impacts

District staff have identified two general types of water impacts that may result from implementing the AQMP. The first type of water impact specified can be characterized as an increase in water demand. Increased water demand may result from using water directly as a control technique, eg., as a soil binder for particulate control, or indirectly as a component of a control technology, eg., water used in wet scrubbers, demisters, water used for regenerating spent carbon, etc.

Water used as part of an industrial process creates the second type of water impact identified, i.e., water quality impacts. For example, wastewater from control equipment such as wet scrubbers, demisters, etc. may become contaminated with toxic materials from the production process, eg., hexavalent chromium, sulfuric acid, solvents, etc. Other types of control equipment that do not use water directly in the control process, may require additional water to clean the control equipment. For example, regenerating spent carbon results in an aqueous solution that may be contaminated with organic materials. Selective catalytic reduction devices may also require water or steam cleaning to remove ammonium-containing particles. Wastewater resulting from industrial cleaning processes, if released to the public sewage system, may create water quality and possibly public health impacts.

Plant Life Impacts

It is estimated that millions of dollars of damage occurs annually to agricultural crops because many of these plant species are sensitive to the destructive effects of oxidizing agents such as ozone or NO_x. Therefore, improving air quality will have a beneficial effect on plant communities in general, and many plant species in particular.

However, the diversity of plant life in the Basin may change due to changes in land use. For example, the accelerated development or relocation of developments proposed for some of the less populated and, therefore, less developed areas in the Basin: may encroach upon land currently used for agriculture, thus reducing total acreage; may encroach upon undisturbed habitats or ecosystems; or may encroach upon habitats containing rare and/or endangered plant species. In addition, some of the emissions control measures proposed in the AQMP require changing certain agricultural practices, thus potentially affecting the types of crops grown in the Basin or affecting total crop acreages.

Animal Life Impacts

As discussed for plant life impacts above, the diversity of animal species and their population numbers may be affected due to changes in land use. Increased development in less developed or undisturbed habitats may reduce a specie's home range or territory size which will directly affect the population size. In addition, rare and/or endangered species may experience some loss of habitat. Alternatively, loss of predatory species, usually the most sensitive to habitat loss or perturbations, may create population explosions among prey species, which may have negative repercussions throughout an ecosystem.

Noise Impacts

In some cases, local noise levels may increase as a result of implementing the AQMP. Emissions control measures that require truck rescheduling may cause truck transport and delivery during nonrush-hour traffic periods. This may increase the number of hours per day that noise levels may be elevated.

Light and Glare Impacts

Light and glare impacts that may result from implementing the AQMP are expected to be minimal. The only impact identified was the potential increase in light or glare from solar dishes and reflectors at power generating stations. This assumes that solar power becomes a larger source of energy in the Basin.

Land Use Impacts

Implementing the AQMP may result in substantial alteration of current or future land use patterns in the Basin. For example, AQMP proposals calling for alternative work locations may create a demand for local work centers. Local work centers would require land for buildings and other infrastructure

improvements such as parking facilities, driveways, etc., that could otherwise be used for housing or recreation. A similar type of land use shift may occur by implementing the Jobs/Housing Balance measures. For example, job-rich areas would require changes in local land use plans to accommodate residential use. Increased residential use would require additional acreage for residential buildings. Housing-rich areas would have similar requirements to accommodate increased commercial use.

To reduce secondary impacts from mobile sources the AQMP proposes several control measures that may alter current land use patterns. To reduce freeway congestion, SCAG's Regional Mobility Plan (SCAG, 1988b) proposes a Freeway Capacity Enhancement measure that would require new transportation corridors, as well as improving existing freeways and interchanges. A second means of reducing freeway congestion proposed by the AQMP is to encourage ridesharing by establishing high-occupancy vehicle (HOV) lanes as part of existing and planned freeway systems. Both these transit improvements may require committing additional land to accommodate transit turn-out, HOV lanes, as well as other infrastructure improvements. A secondary impact of improving or adding new transportation corridors is that previously undeveloped areas may be opened to housing or commercial development.

Natural Resources

Implementing the AQMP will irrevocably commit significant environmental and natural resources within the Basin to public and private industrial, commercial, or urban uses. The December 1988 EIR identified several areas in which the AQMP may accelerate the rate at which renewable natural resources are used, or may result in substantial depletion of non-renewable natural resources. In addition to the changes in land use patterns in the preceding section, additional land may be committed to transportation, industrial/commercial, or urban development.

The AQMP's extremely low-emitting technology option, if selected, will require substituting electric power, for example, for conventional combustion processes in the industrial and transportation sectors. The extent to which electricity is produced from nonrenewable fossil fuels, will determine the rate at which these energy sources will be depleted. Therefore, significant

reductions in energy supplies could occur. Alternatively, renewable electric energy supplies such as solar, photovoltaic, geothermal, or wind may be used at a faster rate.

A number of control measures proposed in the AQMP may accelerate the depletion of other nonrenewable natural resources. For example, steel and other metals, concrete, glass, asphalt, etc., used for buildings, railroads, transportation vehicles, commercial or industrial equipment, or transportation corridors would be depleted at a faster rate. Renewable natural resources, such as lumber used as a building material or source of paper may be depleted at a faster rate.

Risk of Upset

Although the goal of the AQMP is to improve air quality to protect public health, some of the proposed control measures may have secondary risks associated with them such as the risk of fires, explosions, and accidental releases of toxic liquids or gases. The sources from which these risks of upset may occur include production, transportation, storage, treatment, handling or disposal of hazardous materials.

Many air pollution control technologies have secondary impacts contributing in various ways to risks of upset. For example, some types of control equipment use filters that capture and collect or concentrate potentially hazardous particulate materials, eg., baghouse filters, fabric filters, HEPA filters, and carbon adsorption. If these hazardous materials are accidentally released during handling, i.e., while changing filters, worker health impacts could occur through inhalation of hazardous particulates. In addition, if, during transport to a waste disposal facility, these hazardous materials are accidentally released, impacts to public health may occur either through inhalation or if the hazardous material is release into a public water supply for example.

Other types of control equipment require hazardous materials as part of the control process. For example, selective catalytic reduction devices inject anhydrous ammonia into a combustion source's flue gas. The ammonia reacts with NO_x emissions in the presence of a catalyst, thus reducing NO_x to

elemental nitrogen and water. Ammonia is a hazardous material and risks of upset are present during transport to a facility, storage, and use.

The extremely low-emitting technology proposals contained in the AQMP proposes to substitute distillate fuels (gasoline and diesel for example) with clean-burning fuels including but not limited to such as methanol, compressed natural gas (CNG), or liquified petroleum gas (LPG). Like the distillate fuels, extremely low-emitting fuels are flammable and, therefore, may be ignited accidentally by sparks or flames. In addition, vapors from these three fuels can travel to a source of ignition and "flash back." LPG is under pressure and in the event of an accident its storage tank may be punctured and could explode. Since methanol is a liquid fuel, an accidental release could contaminate surface or groundwater supplies.

Population

Even without implementing the AQMP, the Basin population is expected to increase from a 1984 baseline population of slightly greater than 11 million people to a 2010 projection of over 16 million people. The growth management policies proposed in the AQMP may indirectly restrict growth if local governments enact controls on the number and timing of available jobs, housing, or transportation systems. However, the actual effects of the growth management policies are currently inconclusive.

Other proposals contained in the AQMP, such as the jobs/housing balance plan and the Freeway Capacity Enhancements measure, actively encourage population redistribution. In general, population redistribution is expected to improve air quality by reducing the number of commuter vehicle miles traveled (VMT). Reducing VMTs will have a secondary air quality benefit by reducing emissions from freeway vehicle congestion. However, population redistribution may increase infrastructure requirements beyond the capabilities of small local governments.

Housing

The Basin's housing stock is expected to increase 52 percent by 2010, as a result of population growth and diminishing household size. Implementing the AQMP is not expected to create additional demand for future housing. However, because of the proposed jobs/housing balance proposal, new housing is expected to be reallocated from housing-rich areas to job-rich areas. Such a reallocation of housing may create secondary impacts on local land use policies or create a greater demand for infrastructure improvements.

Transportation

Several control measures proposed in the AQMP specifically address improving air quality by reducing congestion on transportation corridors, as well as expanding or developing new public transit systems. However, several secondary environmental impacts may occur, characterized either as a short-term impact or a moderate- to long-term impact. The most pervasive short-term impact identified was transportation and traffic circulation disruptions due to the construction of heavy and light rail public transit systems, construction of HOV lanes, and the expansion of existing transportation corridors.

Moderate- to long-term impacts may result from several specific control measures. For example, control measure 3.a., Truck Dispatching and Rescheduling, would prohibit trucks from operating on major transport corridors during peak traffic hours. The net effect of this control measure is that delivery and transport trucks may use smaller surface streets during peak traffic periods when they would be prohibited from using major transport corridors. This would increase congestion and circulation impacts on streets that normally experience lower levels of traffic flow. In addition, increased transport truck use of smaller streets will increase traffic hazards to other motor vehicles, bicyclists, and pedestrians.

Another AQMP proposal would require fleet vehicles, including transit buses to convert to extremely low-emitting fuels such as methanol, CNG, LPG, etc. Converting transit vehicles to extremely low-emitting technologies are expected to be costly to transit owners. Transit owners would have to make

up these costs by either increasing fares or curtailing service improvements or route expansions. Not only would this outcome conflict with control measure 2.g. (secure funding for unconstrained transit improvements), but it would reduce incentives to the public to use transit systems because fares would be expensive, the system would have fewer destinations, and, therefore would be less convenient for the public to use.

The final transportation impact identified in the December 1988 EIR would be a long-term impact resulting from extremely low-emitting technology fueling urban bus systems. For example this proposal may call for electrification of major bus routes by installing conventional overhead transmission lines. Some reconfiguration of bus routes may be necessary to merge and interface electric bus routes with non-electric bus routes. This may constrain routing flexibility or could alter bus routes to streets that currently do not experience bus traffic. Rescheduling bus routes may increase traffic hazards to other motor vehicles, bicyclists, and pedestrians.

Public Services

If adopted, the AQMP will create a need for new or expanded governmental services in the following public service sectors: local police departments, local fire departments, county health agencies, local school districts, and the South Coast Air Quality Management District.

Public agencies that will be particularly affected by implementing a number of the proposed AQMP policies include local police, fire, and county health agencies. Several AQMP proposals are expected to generate hazardous or other waste materials that will require transport to appropriate waste disposal sites within or outside of the Basin. For example, one of the secondary effects resulting from some types of air pollution control technologies is the generation of hazardous wastes, eg., carbon adsorption, wet scrubbers, or filtration control devices. The proposed AQMP extremely low-emitting technology proposals may result in transporting a number of new types of combustion fuel, which are hazardous because they are flammable and/or toxic. Control measure D-5 proposes to transport all biodegradable wastes to appropriate disposal sites out of the Basin.

In the event of a large accidental release of hazardous materials, the local police department, fire department, and county health agency are required to respond to the emergency and provide any assistance necessary to protect public health. The fire department is the first to respond to an emergency release of a hazardous material and has the responsibility of containing or limiting the spread of the substance. The county health agency is required to respond to an emergency release of a hazardous substance to provide any necessary clean-up or remediation, thus removing any threats to public health. The local police department must respond to an emergency release to prevent the public from accidentally coming into contact with the hazardous material while it is being contained or cleaned up. The police also provide assistance if rerouting traffic or evacuating people from the area. Therefore, these three public agencies may require additional funding for more personnel, personnel training, and equipment.

As stated in the previous section AQMP proposals will affect transportation and circulation policies. For example, parking management proposals may require additional police for traffic direction or parking enforcement. In addition, rerouting of delivery trucks or public transit bus lines may require additional police for traffic direction. In either case, local police departments may require additional funding for personnel, training, and equipment.

Growth management controls proposed for promoting a jobs/housing balance at the subregional level will result in population shifts from housing-rich areas to job-rich areas. A decline in population density in any area will relieve classroom crowding and reduce the need for new school facilities in that area. However, local population increases will have the opposite effect, i.e., classroom overcrowding may occur and a need for new facilities will arise. The growth in school facilities and enrollment increases will require school districts to purchase new facilities and equipment and they will need to hire additional teachers, administrators, and support personnel.

While many of the control measures proposed in the AQMP will help streamline District permitting processes, the scope, magnitude and number of proposed programs required to develop, implement, and enforce new policies is large. Therefore, additional personnel and equipment will be needed to process permits, research new control technologies, prepare rules, assess implementation strategies, and enforce compliance.

Energy

Many control strategies contained in the AQMP emphasize a shift away from fossil fuel energy production to energy production strategies and techniques that are less polluting. The AQMP actively encourages the use of a number of extremely-low emitting technologies, for example electrification of stationary industrial combustion processes such as internal combustion engines, boilers, and heaters. In addition, several transportation control measures propose possible electrification of: Basin railway systems, portions of the urban mass transit system, and a portion of passenger fleet vehicles. Additional electricity demand may occur as a result of increased use of air pollution control equipment. Many types of control equipment require electricity as a power source. Therefore, if the AQMP is adopted, the additional electrical energy demand projected for the Basin is approximately 60,500 gigawatt hours (GWh) per year. This figure represents a substantial increase in demand for electricity.

Other control measures may affect the Basin's capacity to generate electricity from sources other than utility boiler units. For example, several control measures may affect existing cogeneration units and further expansion of these sources of electricity. This may reduce the capacity of Basin power sources to supply future energy needs. Alternatively, utility boiler units may be able to increase capacity to supply future energy need. However, utility boilers produce electricity less efficiently than do gas turbine cogeneration units.

The proposed extremely low-emitting technology proposals may substantially increase current demand for natural gas. For example, natural gas, either in the form of compressed natural gas, or liquified natural gas, is considered a promising clean combustion fuel for certain "niche market" vehicles. Natural gas is also used as a feedstock to produce methanol, another promising fuel. Coal is also a potential feedstock for methanol, but natural gas will be preferentially used, at least in the near-term, because producing methanol from coal is more expensive, more polluting, and increases the production of "greenhouse gases" relative to gasoline. Producing methanol from natural gas may result in equivalent or fewer "greenhouse gases." (Greenhouse gases are gases such as CO, CO_2, methane, etc., that may contribute to a global warming trend, referred to as the greenhouse effect.). The demand for other types of extremely low-emitting technologies may increase substantially with advances in technology.

Utilities

As indicated in the previous section, the AQMP proposes embarking upon a possible program to electrify many sectors of the Basin that currently rely on fossil fuels for power. The District estimates that an additional 60,500 GWh per year will be required to satisfy the energy requirements of the extremely low-emitting technology, if electrification occurs. If out-of-Basin energy supplies cannot accommodate future energy requirements, electric utilities in the Basin will necessitate extensive upgrading and construction of transmission lines, substations, and switching stations. New units at existing utilities, or new sources of electricity may also be needed to supply any unmet energy requirements.

The extremely low-emitting technology proposals in the AQMP will likely result in an increased demand for natural gas. To supply the projected increased demand for natural gas, the major natural gas utilities in the Basin may need to construct additional facilities or expand the existing supply network.

Recreation

Implementing the AQMP is expected to accelerate the acquisition of land in the Basin, alter current land uses, and increase construction on undeveloped land. These effects may infringe upon existing recreational activities and/or irrevocably commit land to nonrecreational purposes, thus eliminating the possibility of establishing future recreational sites.

Human Health

The primary purpose of the AQMP is to attain all the state and federal ambient air quality standards for the six criteria pollutants to protect health with a margin of safety. However, in some instances control measures or control technologies may have negative secondary impacts that could result in human health impacts.

The AQMP places great emphasis on ROG emissions reduction strategies for a number of businesses or industries. Several control measures in the AQMP propose reducing ROG emissions from industries using solvents in spray coating materials, using solvents as degreasers, or using solvents for cleanup purposes. One of the options available to reduce ROG emissions from these sources is to substitute exempt solvents in place of the current solvents, or use reformulated solvents. In some cases, reformulated solvents or exempt solvents have hazardous properties themselves, primarily flammability and/or toxicity. Exposure to these substances through dermal, inhalation, or ingestion pathways may affect worker health.

One of the fuels considered for use in the extremely low-emitting technology control measures is methanol. When ingested in sufficiently high doses, methanol has systemic effects resulting in three potential diseases: organic solvent poisoning; systemic acidosis; and central nervous system effects, including changes in the eye and basal ganglia (Cornish, 1980). Accidental releases of methanol during storage or use may create significant worker health effects. Accidental releases during transport could create significant public health effects. In addition, one of the products of incomplete combustion of methanol is formaldehyde. Formaldehyde is a probable human carcinogen and, therefore, could also affect worker or public health.

Control technologies used to comply with proposed AQMP control measures may have secondary effects that may be detrimental to human health. For example, selective catalytic reduction devices use ammonia to reduce NO_x emission (in the presence of a catalyst) to elemental nitrogen and water. Ammonia is a hazardous material and any accidental releases during storage or handling could affect worker health. Additionally, accidental releases of ammonia during transport could result in public health impacts.

Economic Impacts

The District's CEQA Guidelines (SCAQMD, 1986) specify the extent to which the economic and social impacts of a project (or rule) are to be included in the EIR. It is not necessary to consider the project's economic effects as an environmental impact. A project's economic and/or social impacts must be considered in the EIR only under three circumstances:

When a project's economic and/or social consequences themselves cause physical environmental impacts (Section 9.11 (a)). These "...intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes."

When the social and/or economic aspects of a project's physical environmental impacts make these impacts significant (Section 9.11 (b)).

When economic, social, or housing factors are important in determining if a project's physical environmental impacts can be avoided or reduced (Section 9.11(c)).

Although a discussion of economic costs of a project are not required by CEQA, the magnitude of the costs associated with implementing the AQMP (Table 5-1) is necessary because of possible effects on the Basin economy. If the costs of implementing the AQMP actually approach some of the projected costs, secondary environmental impacts will likely result.

TABLE 5-1

Tier I Only
Annual Control Costs By Industry[1, 3]
(In Millions Of 1987 Dollars)

SIC CODE	INDUSTRY	COST
2	Agricultural Production - Livestock	$6.6
7	Agricultural Services	0.3
13	Oil and Gas Extraction	175.4
15	General Building Contractors	164.1
16	Heavy Construction, Ex. Building	83.7
20	Food and Kindred Products	20.5
22	Textile Mill Products	0.1
23	Apparel and other Textile Products	0.4
24	Lumber and Wood Products	31.4
25	Furniture and Fixtures	146.8
26	Paper and Allied Products	1.6
28	Chemicals and Allied Products	39.8
29	Petroleum and Coal Products	687.8
30	Rubber and Misc. Plastics Products	36.1
32	Stone, Clay, and Glass Products	44.3
33	Primary Metal Industries	10.9
34	Fabricated Metal Products	71.9
35	Industrial Machinery and Equipment	9.8
36	Electronic & Other Electric Equipment	154.1
37	Transportation Equipment	67.8
44	Water Transportation[2]	0.0
49	Electric, Gas, and Sanitary Services	480.1
55	Automotive Dealers & Service Stations	7.5
58	Eating and Drinking Places	22.9
65	Real Estate	1.9
70	Hotels and Other Lodging Places[2]	0.0
72	Personal Services	20.7
75	Auto Repair, Services, and Parking	37.9
80	Health Services	25.0
82	Educational Services	22.4
TOTAL		$2371.6

[1]In many cases, these costs reflect worst case assumptions.
[2]Annual costs are less than $100,000.
[3]These control costs include forecasted OCS activity.

Section 4-18 of the December 1988 EIR has an extensive discussion of the specific Tier I costs to a majority of industries in the Basin. Cost estimates for Tier II control measures are difficult to project because many of the control measures require advances in current control technologies, or a transfer of current technologies to new applications. Therefore, cost impacts for Tier II control measures are only discussed in general or relative terms. The economic expenses of Tier III control strategies are potentially the most costly of all those contained in the AQMP. A discussion of cost impacts of Tier III control technologies would be too speculative at this time because these control measures require significant advances in technology.

Impacts on the Earth

Major components of the AQMP propose changing current land use and development patterns. For example, expanded development along the coastline may occur and major portions of underdeveloped or undeveloped areas may experience additional development. Any development activities may require land to be graded or otherwise modified to construct highways, construct housing developments, construct industrial or commercial centers, or make other infrastructure improvements.

Aesthetics

Implementing the AQMP may have a number of effects which could negatively impact aesthetics in sites open to public view. Changes in land use patterns may encourage construction on, or development of scenic areas, thereby decreasing the aesthetic value of these areas. Shifts in population density from housing-rich areas to job-rich areas may expose a considerable number of people to industrial sites that may be visually offensive. Finally, greater reliance on electrification of urban mass transit systems and railroad lines may impair the aesthetic value of scenic natural areas or attractive urban features such as monuments or unique architectural structures.

Archaeological/Paleontological/Historical Impacts

Although most archaeological sites in the Basin are severely disturbed, implementing the AQMP will shift the pattern of development. As undisturbed land is developed, new archaeological sites may be discovered. Development, therefore, may result in adverse impacts to potentially valuable archaeological sites. Additionally, increased residential and employment densities will also generate pressure for more efficient use of existing developed land. This may, in turn, threaten homes and buildings with historic characteristics as the pressure for, and pace of redevelopment intensifies.

SECTION 6

SUMMARY AND TABULAR COMPARISON OF IMPACTS FROM EACH PROJECT ALTERNATIVE

Introduction

INTRODUCTION

To facilitate comparison between the AQMP and each of the proposed alternatives, District staff have identified the major environmental impacts identified for each project alternative and categorized them according to the specific CEQA area of analysis. Table 6-1 summarizes and tabularizes some of the most important impacts identified. Note that Table 6-1 does not include impacts for the Alternative Growth Scenario or the Alternative Mobility Scenario because these two alternatives have impacts nearly identical to the AQMP. Also note that Table 6-1 excludes impact summaries for a number of CEQA topics. Impact summaries for all CEQA topics are included in the following sections. Each topic summary contains a brief comparison of the environmental impacts for each project alternative relative to the AQMP impacts.

In general, the Delayed Compliance Alternative, the Alternative Growth Scenario, and the Alternative Mobility Scenario have nearly identical impacts to the AQMP. Therefore, in the discussion below, any impacts resulting from the AQMP will also refer to possible impacts resulting from these three alternatives unless specifically noted otherwise. It is estimated that, if implemented, the Least Cost Alternative would require implementing all of the Tier I measures and most of the Tier II measures. For this reason, environmental impacts resulting from the Least Cost Alternative would be nearly identical to the environmental impacts resulting from the Tiers I and II Only alternative. Therefore, any impacts attributed to the Tiers I and II Only Alternative will also refer to the Least Cost Alternative.

The No Project Alternative would continue the *status quo* and, therefore, would not result in any of the environmental impacts associated with the AQMP for any CEQA topic of analysis. However, it would not provide any of the benefits such as clean air, less traffic congestion, expanded urban mass transit systems, shorter work commutes, etc. Without the planned growth proposals in SCAG's Growth Management Plan uncontrolled development may actually accelerate environmental degradation, particularly in undeveloped areas. Since this alternative would not produce any of the specific impacts associated with the AQMP, it will not be considered further in this section.

TABLE 6-1

Summary and Tabular Comparison of Alternatives for Selected CEQA Topics

ALTERNATIVE	AIR QUALITY	WATER
AQMP	All NAAQS attained Control technology impacts, eg., formaldehyde emissions from methanol, increased solid waste generation, increased criteria pollutant emissions from afterburners, toxic emissions from reform. solvents	Increased water use, methanol spills, groung water and surface water contamination, and possible liquid waste generation.
ROG Primarily Alternative A	NAAQS not attained.. Control technology impacts, eg., increased solid waste generation, increased criteria pollutant emissions. Possible EPA sanctions for nonattainment NOx control technology impacts avoided.	Increased water use and liquid wastes generated from control equipment, possible spills from increased use of fossil fuels. Impacts avoided include reduced water contamination from ammonia & methanol spills, electrifica. etc
ROG Primarily Alternative B	Attains only CO NAAQS. Control technology impacts, solid waste generation, increased criteria pollutants from afterburners, toxic emissions from reform. solvents. Possible EPA sanctions for nonattainment. NOx control technology impacts avoided	Increased water use and liquid wastes generated from control equipment, possible spills from increased use of fossil fuels, some clean fuel impacts. Impacts avoided include reduced water contamination from ammonia & methanol spills, electrification, etc.
Tiers I & II Only	Attains all but ozone NAAQS. AQMP Tiers I & II control technology impacts: solid waste generation, criteria pollutant impacts from afterburners, & toxic emissions from reform. solvents. Tier III impacts avoided. Possible EPA sanctions for nonattainment.	AQMP Tier III impacts associated with solvent substitution and some clean fuel water contamination impacts avoided. AQMP Tier I & II impacts would be experienced.
Least Cost Measures Only	Attains all but ozone NAAQS. Assumes most Tier I & II control measures implemented and no Tier III measures implemented. Impacts similar to Tier I & II Alternative above. Possible EPA sanctions for nonattainment.	Assumes most Tier I & and II control measures implemented & no Tier III measures implemented. Impacts similar to Tier I & II Alternative above.
Delayed Compliance	Attains all NAAQS. Implements all AQMP control measures over a longer time frame. Environmental conditions after 2010 are unknown.	Impacts the same as the AQMP, occurring over a longer time frame. Environmental conditions after 2010 are unknown.
Additional Control Effort	Attains all AAQS. Implements all AQMP control measures plus others. Would have similar impacts to the AQMP, although some impacts may worsen, ie., increased criteria pollutant emissions from afterburners, toxic emissions from reform solvents, electrification, & clean fuels impacts, etc.	Same impacts as the AQMP, some impacts may worsen, eg., possible increase in methanol and ammonia spills and water use impacts. More extensive water quality impacts from control technologies.
No Project	No NAAQS attained. Possible short-term air quality improvements, but long-term air quality deterioration. Other benefits avoided, ie., health, traffic circulation improvements, etc. Possible EPA sanctions.	Continued EPA sanctions could result in water quality impacts due to restrictions on waste water system funding. No direct impacts.

TABLE 6-1 (Continued)

Summary and Tabular Comparison of Alternatives for Selected CEQA Topics

ALTERNATIVES	HUMAN HEALTH	ECONOMICS	ENERGY & UTILITIES
AQMP	Potential health impacts from Tier III measures eliminated. Impacts similar to the Tiers I & II Only Alternative above.	Economic benefits from clean air include increased revenue to the air pollution control industry. Revenue losses due to agricultural and materials damage will decline.	Increased energy conservation. Increased electricity use, reliance on out of Basin supplies, and implementation of Alt. Fuels Prog. (methanol, nat. gas, solar, propane etc)
ROG PRIMARILY ALTERNATIVE A	Continued exposure to criteria pollutants, with continued negative health effects. Other negative health effects include exposure to hazardous and solid wastes and continued exposure to benzene emissions from continued use of gasoline.	Less costly than AQMP. Possible secondary environmental and human health effects from loss of jobs and/or services in those sectors of the economy that experience a disproportionate share of the control costs.	Impacts associated with large scale electrification, particularly out of Basin impacts would be avoided.
ROG PRIMARILY ALTERNATIVE B	Continued exposure to criteria pollutants except CO, with associated negative health effects Possible exposure to hazardous and solid wastes, exposure to toxic emissions from reform. solvents, & continued exposure to benzene emissions due to greater use of gasoline than called for in the AQMP.	Less costly than the AQMP, but includes some additional costs not included in other alternatives. Possible secondary environmental impacts from loss of jobs and/or services in those sectors of the economy experiencing a disproportion-share of the control costs.	Some of the impacts resulting from large-scale electrification may be avoided.
TIERS I & II ONLY	Potential health impacts from Tier III measures eliminated. Continued health impacts from ozone. Possible negative health impacts from exposure to solid & hazardous wastes, possible exposure to toxic emissions from reformulated solvents, & pos-exposure to formaldehyde.	Economic impacts of Tier III, which are substantial are eliminated. Cost impacts more evenly distributed over the Basin economy. Possible secondary environmental impacts from loss of jobs and/or services, but to a lesser extent than the AQMP.	AQMP Tier III impacts associated with electrification, and clean fuels use would be avoided. AQMP Tier I & II impacts would be experienced.
LEAST COST MEASURES ONLY	Tier III measures eliminated. Impacts similar to the Tiers I & II Only Alternative above.	It is probable that Tier III would not be implemented. Unclear how many Tier I & Tier II measures would be implemented. Maximum impacts similar to Tier I & II Alternative above.	It is probable that Tier III would not be implemented. Unclear how many Tier I & II measure would be implemented. Maximum impacts similar Tier I & II Alternative above.
DELAYED COMPLIANCE	Short-term negative health impacts due to delayed compliance with AAQS. Long-term health benefits associated with attaining all AAQS. Otherwise, impacts similar to the AQMP.	Impacts may be similar to AQMP, but longer time frame may have two effects: economic sectors may more easily accomodate costs over a longer period and inflation may increase control costs.	Impacts the same as the AQMP, occurring over a longer time frame. Environmental conditions after 2010 are unknown.
ADDITIONAL CONTROL EFFORT	Health benefits will accrue due attaining all AAQS. Impacts will approximately the same as for the AQMP, although there may be increases for some impacts, ie., exposure to solid and hazardous wastes or possible increased exposure to toxic emissions from reformulated solvents.	Impacts similar to those resulting from the AQMP. Costs may increase due to additional controls. Increased costs may further burden the Basin economy result in greater loss of jobs and ensuing possible secondary environmental and human health impacts. Potentially greater demands on government services.	Additional control measures may include a greater emphasis on the use of electricity and other cleaner burning fuels resulting in increased out of Basin impacts.
NO PROJECT	Adverse health impacts from continued non-attainment of air quality standards. No other direct impacts identified.	Non-attainment of AAQS will contribute to healthcare costs and costs from damages to materials destruction and agricultural damage. Continued EPA sanctions may affect Basin employment & economy.	Continued reliance on fossil fuels, delayed development of alternative energy sources and increased fuel costs will exacerbate air pollution problems and the greenhouse effect.

Air Quality

The primary purpose of the AQMP is to attain the state and federal ambient air quality standards for all six established criteria pollutants. The rationale for including the proposed alternatives is to determine if the goals of the AQMP can be met in an alternative manner that results in fewer environmental impacts. Of the alternatives, the AQMP is one of only two different alternatives expected to attain all of the state and federal ambient air quality standards. The ROG Primarily Alternative A is not expected to achieve the state and federal ambient air quality standards for CO, NO_2, PM_{10}, or ozone. The ROG Primarily Alternative B would ultimately attain the federal CO ambient air quality standard only. Although both of the preceding alternatives would reduce ozone levels, they would not attain the ozone state and federal ambient air quality standards. However, neither of these two alternatives would result in noncompliance with the lead and SO_2 state and federal ambient air quality standards. The exact effects of the other alternatives are unclear at this time, although the Additional Control Effort Alternative would be expected to achieve all of the state and federal ambient air quality standards.

The AQMP may result in several secondary environmental impacts such as increased ammonia emissions from NO_x reduction technologies, criteria pollutant emissions from some types of air pollution control equipment, possible toxic emissions from solvent substitutions, and increased formaldehyde emissions from greater use of methanol. The Additional Control Effort Alternative would produce these same impacts, possibly exacerbated, plus additional unknown impacts. The Tiers I and II Only Alternative would result in some of these impacts, although it is unclear which ones would occur and which would be avoided. The ROG Primarily Alternative A and the ROG Primarily Alternative B would avoid the impacts from increased ammonia emissions from NO_x reduction technologies and possible clean fuels impacts.

Water Quality

Implementing the AQMP may result in a number of secondary impacts to waters in the state. For example, increased water use is expected because

many control technologies use water in their control process. Ocean contamination may occur because of spills from OCS activity or from inadequately treated wastewater. Water quality contamination may occur as a result of increased production of contaminated wastewater from control equipment or from spills of hazardous substances such as methanol, ammonia, or liquid toxic wastewater.

The Additional Control Effort Alternative would include all of the same impacts resulting from the AQMP. Some of these impacts would be intensified, eg., spills of hazardous materials and water contamination, and other unknown impacts may occur. The ROG Primarily Alternative A and the ROG Primarily Alternative B would avoid the impacts associated with ocean contamination from OCS activities and spills of hazardous materials would be reduced. The Tiers I and II Only Alternative would result in a majority of the AQMP's environmental impacts, although the impacts would not be as pronounced.

Plants

Several proposals in the AQMP may affect plant species populations or their diversity. Some of the proposals recommending changes in agricultural practices may affect natural plant species or diversity, although the exact nature of these effects is unclear because agriculture in general is disruptive to natural plant communities. Relocating populations from housing-rich areas to job-rich areas may accelerate development of undeveloped areas. This may restrict or encroach upon natural ecosystems.

Implementing the ROG Primarily Alternative A and the ROG Primarily Alternative B would avoid these specific impacts, although it is unclear if these proposals will completely avoid impacts to plant species. Since the plant life impacts associated with the AQMP would result from Tier I and Tier II control measures, the Tiers I and II Only Alternative would result in the same impacts. The Additional Control Effort Alternative would probably have impacts similar to the AQMP.

Animals

Any AQMP impacts affecting or infringing upon plant communities would also affect animal species populations diversity. As for plant species impacts, implementing the ROG Primarily Alternative A and the ROG Primarily Alternative B would avoid specific AQMP impacts, although it is unclear if these proposals would completely avoid animal species impacts. Since most of the animal species impacts associated with the AQMP would result from Tier I and Tier II control measures, the Tiers I and II Only Alternative would result in nearly identical impacts. The Additional Control Effort Alternative would probably have impacts similar to the AQMP.

Noise

Several proposals in the AQMP may increase ambient noise levels. For example, some types of air pollution control equipment may elevate noise levels at industrial sites. Additionally, rescheduling or rerouting transport trucks and/or urban mass transit buses, etc., may increase noise levels on streets that currently have less traffic and, therefore, less noise. The ROG Primarily Alternative A and the ROG Primarily Alternative B would avoid many of the noise impacts associated with traffic rerouting. However, these alternatives would require additional control equipment for some industries, thus creating noise impacts, but to a lesser extent than the AQMP. Noise impacts resulting from the Tiers I and II Only Alternative and the Additional Control Effort Alternative would be equivalent to those resulting from the AQMP, although impacts from the Additional Control Effort Alternative might be slightly more severe.

Light and Glare

The possibility of light and glare impacts resulting from the AQMP is expected to be minimal. The only impact identified was the possibility of glare from solar dishes and reflectors at power stations. Because there are some Tier I and Tier II proposals that make use of solar power, glare impacts may result from the Tiers I and II Only Alternative. The Additional Control

Effort Alternative would also be expected to produce glare impacts, although the extent of these impacts is unclear.

Land Use

Implementing the AQMP May result in substantial alteration of current or future land use patterns in the Basin. Relocating or altering populations will result in developing undeveloped areas in the Basin which will require infrastructure improvements and expansion of utility services. Additional land will also be required to improve, expand, or create new transportation corridors or urban mass transit systems. Although accelerated construction or acquisition of land may irrevocably alter current land use patterns, impacts resulting from these changes are expected to be beneficial. Some of the positive impacts include reduced population densities, shorter work commutes, less freeway congestion, expanded urban mass transit systems, reduced mobile source emissions, etc.

Neither the ROG Primarily Alternative A nor the ROG Primarily Alternative B is expected to significantly alter land use patterns. However, neither of these alternatives will have any of the positive impacts described in the preceding paragraph. The Tiers I and II Only Alternative and the Additional Control Effort Alternative are expected to produce many of the same positive impacts described above for the AQMP.

Natural Resources

As described in the above section, implementing the AQMP will irrevocably commit land to development projects, transportation corridors, parking lots etc. Greater use of fossil fuels to generate electricity may accelerate the depletion of fossil fuel supplies, as well as other nonrenewable resources such as metal, concrete, glass, etc., and renewable natural resources such as trees or other plant products.

It is unlikely that the ROG Primarily Alternative A and ROG Primarily Alternative B will accelerate the depletion of nonrenewable or renewable natural resources to the same extent as the AQMP. However, it is possible

that these alternatives would deplete some types of fuel, fossil fuels for example, to an equivalent or greater extent because these alternatives do not contain any of the energy conservation measures included in the AQMP. The Tiers I and II Only Alternative would probably accelerate the depletion of nonrenewable and renewable resources to a lesser extent than would the AQMP, but would accelerate depletion of these resources to a greater extent than both ROG Primarily Alternatives. The Tiers I and II Only Alternative, however, is not expected to deplete fossil fuels to the same extent that the AQMP would deplete them because it does not include the potentially energy intensive Tier III proposals. The Additional Control Effort Alternative may exacerbate the impacts associated with the AQMP.

Risk of Upset

Many air pollution control technologies that may be used to attain the goals of the AQMP have secondary impacts contributing in various ways to risks of upset. For example, filter-type control equipment collect and concentrate potentially hazardous particulate matter that could be released accidentally during handling and/or disposal. Other types of control equipment or control strategies involve use of hazardous materials, eg., ammonia, methanol, etc.

To a certain extent, all of the proposed alternatives have the potential to create risks of upset. The difference between the AQMP and the proposed alternatives is the extent to which these risks may occur. The ROG Primarily Alternative A and the ROG Primarily Alternative B contain many of the same risks of upset associated with the AQMP, except for the risks associated with two types of NO_x control technologies (ie., accidental releases of ammonia) and risks associated with the clean fuels program, primarily risks associate with methanol. The Tiers I and II Only Alternative would probably have all of the same risks of upset associated with the AQMP, except that the extent to which these risks would occur would be less because Tier III proposals (not implemented) call for an expanded use of clean fuels. The Additional Control Effort Alternative would create all of the same risks of upset associated with the AQMP. Additionally risks may also occur depending upon the nature of the additional control measures implemented.

Population

The primary effect the AQMP will have on Basin population will be a redistribution of population, primarily from housing-rich areas to job-rich areas. This effect has both positive and negative components. The major negative impact may be an accelerated development of undeveloped land. The primary positive impacts include a greater improvement in air quality, a decline in population density throughout the Basin, shorter work commutes, etc. Since these impacts result primarily from Tier I and Tier II alternatives, all of the proposed alternatives will result equivalent impacts except for the ROG Primarily Alternatives. The ROG Primarily Alternatives will forgo the benefits of population redistribution.

Housing

The jobs/housing balance proposals contained in the AQMP are not expected to affect the total number of houses built in the Basin, they are, however, expected to shift the location of new housing construction. Housing prices may significantly increase because new housing may be built in areas where land is expensive and the prices of comparable existing house is already higher than the national average. This effect will result from all of the proposed alternatives except for the ROG Primarily Alternatives.

Transportation

The AQMP is expected to significantly affect transportation and traffic circulation patterns in the Basin. Some of the transportation management proposals may create short-term traffic congestion problems because of transport truck rerouting, establishing new urban mass transit routes, or altering existing mass transit routes. Basinwide, however, the transportation management proposals are anticipated to significantly reduce traffic congestion because of the proposals for: new and expanded urban mass transit systems; expansion of major transportation corridors, either through improving current corridors or adding new corridors; and encouraging

population relocations so that people live closer to their place of employment, resulting in shorter work commutes.

Although the ROG Primarily Alternative A and ROG Primarily Alternative B would create none of the short-term traffic impacts associated with the AQMP, neither would they produce the beneficial impacts of improved long-term traffic circulation. Improved traffic circulation patterns would also precipitate improvements in air quality, which would not ensue from the ROG Primarily Alternatives. Since the transportation management proposals are contained in all of the remaining alternatives, they would have impacts comparable to the AQMP.

Public Services

Adopting the AQMP will create a need for new or expanded governmental services in the following public service sectors: local fire departments, local county health agencies, and local police departments. Because of the potential for increased generation, use, and/or transport of hazardous substances, these agencies may have to respond to a greater number of hazardous materials releases. Additionally, any increases in local population densities resulting from the growth management policies may create additional need for infrastructure improvements, particularly the need for additional school facilities, teachers, and equipment. Finally, the AQMP will create additional personnel and equipment needs for the South Coast Air Quality Management District to implement and enforce AQMP proposals.

Impacts to public agencies would be reduced to a certain extent if either of the ROG Primarily Alternatives are implemented. There would be increased generation of hazardous materials with the potential of increasing the number of hazardous materials spills, but not to the same extent as with the AQMP. The reason for this is that some technologies using hazardous materials (some NO_x reduction technologies) would not be required and there would be no increases in the transport of clean fuels. In addition, infrastructure improvements resulting from growth management proposals, such as the need for expanded school facilities and additional teachers, would be unnecessary.

The majority of the public service impacts described for the AQMP result from Tier I and Tier II proposals. Therefore, the Tiers I and II Only Alternative would have impacts similar to the AQMP. The Additional Control Effort Alternative may substantially increase these impacts depending upon the extent to which the clean fuels proposals are expanded and the number of addition control measures implemented.

Energy and Utilities

Because these two topics are closely related, they have been consolidated to simplify the discussion. The AQMP envisions embarking upon a program to shift industrial sectors that currently rely on fossil fuels for power to extremely-low emitting technologies such as electrification or cleaner burning fuels. These proposals may result in accelerated consumption of natural gas supplies, as well as accelerated consumption of clean fuels not produced from natural gas. Additionally, electric and gas utilities may have to expand their facilities to accommodate increased demand for energy supplies.

If either of the ROG Primarily Alternatives are implemented, the magnitude of these impacts would probably be diminished considerably because neither alternative proposes a clean fuels program nor do they propose electrification of mobile or stationary emissions sources. However, the ROG Primarily Alternatives do propose control measure that require control technologies using electricity or natural gas either for energy or as part of the control process. Therefore, the ROG Primarily Alternatives will accelerated energy consumption to a certain extent.

The Tiers I and II Only Alternative is also expected to accelerate energy consumption because it has many of the clean fuels and electrification proposals contained in the AQMP. However, this impact should be considerably less because the extensive Tier III electrification called for in the AQMP is not a component of the Tiers I and II Only Alternative. The Additional Control Effort Alternative may substantially increase these impacts depending upon the extent to which the clean fuels proposals and the electrification strategies are expanded.

Recreation

To a certain extent, implementing the AQMP may alter current land use patterns through its growth management and jobs/housing balance proposals. This may infringe upon the amount of land available for current and future recreational sites. All other proposed alternatives may have, to a certain extent, a similar impact. Since the ROG Primarily Alternatives do not contain any growth management policies, this impact could be exacerbated.

Human Health

District staff project that implementing the AQMP should ultimately bring the Basin into compliance with all federal ambient air quality standards as well as all state ambient air quality standards. This result would serve to protect human health from the effects of poor air quality with a margin of safety. There may, however, be some secondary effects resulting primarily from some air pollution control technologies. Some factors that may influence human health include: substitute or reformulated solvents may also negatively affect human health; methanol, used in the clean fuels proposals, is toxic and may affect worker or public health; and some control technologies use hazardous materials as part of their process, or produce hazardous wastes. Human health impacts resulting from both the Tiers I and II Only Alternative and the Additional Control Effort Alternative should be similar.

Modeling efforts by District staff indicate that the ROG Primarily Alternative A will not result in compliance with any state and federal ambient air quality standards. Modeling results of the ROG Primarily Alternative B indicate that it will bring the District into compliance with CO state and federal ambient air quality standards only. It will not result in attaining the state and federal ambient air quality standards for NO_2, PM_{10}, or ozone. Neither ROG Primarily Alternative, however, will result in noncompliance with the lead and SO_2 state and federal ambient air quality standards. The District currently complies with both of these state and federal ambient air quality standards. Since neither ROG Primarily Alternative proposes reformulated or substitute solvents as a control

measure, nor do they propose a clean fuels program, impacts associated with these proposals will not occur. However, human health effect impacts associated with air pollution control technologies (with the exception of the NO_x control technologies) will occur.

Economics

CEQA does not require a discussion of economic cost impacts unless these cost impacts result in secondary environmental impacts. Because of the magnitude of the costs associated with the AQMP, several secondary environmental impacts may occur. Specific costs were estimated only for: the District's Tier I measures, including the Tier I Growth Management and Mobility proposals: and some of the Tier II control measures. Tier III control measures are not yet developed, therefore, costs cannot be estimated.

The exact extent to which economic impacts may contribute to environmental impacts for any of the proposals is unclear. One example of how AQMP costs may create economic impacts is related to control measures proposed for POTWs. The costs for emission controls used to comply with emission limits may be prohibitively expensive. Therefore, funds needed for expansion may be required to purchase control equipment. This may result in inadequate sewage treatment and release of improperly treated effluent, or a moratorium on sewer hookups may occur, thus restricting new construction.

All of the proposals have the potential for costs impacts on various industries or businesses. Cost impacts resulting from most of the proposed alternatives should be less, except for those resulting from the Additional Control Effort Alternative. The exact nature of secondary environmental impacts would have to be assessed during the rulemaking process for particular control measures.

Earth

Implementing the AQMP may result in development of undeveloped areas to accommodated transportation management policies and/or the

jobs/housing balance proposals. However, because of the population growth anticipated for the Basin, the extend to which the AQMP may accelerate development is unclear. All of the proposed alternatives may also affect development of undeveloped areas to an unknown extent.

Aesthetics

Changes in land use patterns resulting from the AQMP may encourage industrial or urban development on scenic areas. As for the previous topic, population growth, in general, may have a greater effect on developing scenic areas than will the AQMP. All of the proposed alternatives have the potential to disrupt scenic areas to a certain extent.

Archaeological/Paleontological/Historical

Because most archaeological sites in the Basin are already severely disturbed, any further disruptive effects would occur to new sites discovered as a result of development in undeveloped areas. All of the proposals have the potential to disrupt archaeological/paleontological/historical areas to a certain extent.

SECTION 7

MITIGATION MEASURES

Introduction

INTRODUCTION

As part of the environmental analysis, an EIR must identify and analyze any significant environmental effects, both direct and indirect, that may result from implementing a project. If adverse environmental effects are identified, the EIR must include a discussion of measures, that "could minimize significant adverse impacts," or a discussion of measures that could "reasonably be expected to reduce adverse impacts," (CEQA, Section 15126 (c)).

Where possible, the AQMP EIR has identified specific potential environmental impacts and one or more measures to mitigate these impacts. In other cases, potential impacts of an indeterminate nature were identified, eg., potential impacts of promoting extremely low-emitting technologies. If feasible, appropriate mitigation measures were identified. In any event, when the specific control measures are developed into emission control rules, a more thorough environmental assessment, including more specific mitigation measures, will occur.

Section 5 summarized the most important significant environmental impacts that may result from implementing the AQMP. The sections below, organized by CEQA topic, summarize potential measures that can be used to mitigate many of the impacts identified in Section 5. It is important to note that the mitigation measures included here are simply a representative sample of possible mitigation measures included in the December 1988 AQMP EIR. These summaries do not include all mitigation measures identified in the Addendum.

Air Quality

To reduce potential health effects of exempt or substitute solvents, water-borne substitutes or non-solvent methods shall be used or special handling techniques shall be implemented. Carbon adsorption techniques shall be considered in cases where there are serious concerns about add-on incinerator auxiliary fuel consumption, toxic emissions, NO_x emissions, or

residual wastes. Hazardous waste impacts from carbon adsorption units shall be mitigated to the extent feasible by recycling. Carefully monitored and controlled ammonia calibration and use shall be required to minimize ammonia slippage from SCR or SNCR. NO_x emissions from incinerator afterburners shall be reduced by using catalytic-type afterburners.

The District is currently investigating measures to reduce the impacts of formaldehyde, resulting from the combustion of methanol.

Water Quality

A number of techniques shall be used to mitigate water consumption used for particulate control: chemical soil and dust binders, seasonal or temporal controls on construction, etc. Other water use impacts shall be mitigated using aggressive water conservation measures such as low-flow plumbing fixtures in homes, low-water landscaping, and drip irrigation. Water conservation and reclamation measures shall be implemented, if feasible, by local agencies.

On-site treatment of liquid wastes from control equipment shall be conducted where practical to reduce the amount and toxicity of hazardous liquid waste and to reduce the possibility of water contamination. In addition, to discharge treated water into navigable waterways, treatment facilities must obtain National Pollutant Discharge Elimination System (NPDES) permits and comply with the conditions of the permits, including annual treatment capacity requirements.

To prevent contamination of groundwater, operators shall comply with all federal and stated standards for maintaining the integrity of storage tanks and ancillary pipes and equipment. This includes regular monitoring for tank leaks to guard against soil contamination that could eventually result in groundwater contamination.

Plant life

Local jurisdictions shall conserve sensitive environments by preserving these areas or by replanting excavation surface areas with local native plants when approving or amending their general and specific plans.

Animal Life

Local jurisdictions shall consider the impacts on sensitive animal species when approving new construction and development. Every attempt shall be made to preserve significant animal habits.

Noise

The impacts of noise intrusion can be attenuated using site design mitigation measures such as insulating houses and buildings along freeways and busy streets; screening highways with trees or walls; land use planning for property bordering on heavily travelled roads; and the use of easements and adequate setbacks. These measures, coupled with active enforcement on the part of State agencies along with city and community ordinances controlling community noise, would provide the reduction of unnecessary noise, and shall be implemented whenever possible.

Light and Glare

Considerations shall be made in urban design to minimize lighting from reflective structures and surfaces and to minimize reduction of access to sunlight by shade and shadow from buildings.

Land Use

Local governments shall address the need for altering current land use through general plan amendments or zoning changes. For example, adjacent cities could join together to designate sites to minimize the need for duplicative plan and zone changes, and to insure efficient siting of facilities. Local jurisdictions shall avoid land use conflicts by incorporating new corridors, plants, and associated land buffers into their general plans prior to development.

Natural Resources

Local jurisdictions shall help counteract the incentive to develop open spaces or agricultural land by regulating development to preserve natural habitats or recreational areas. In addition, local jurisdictions can reduce development of open spaces by establishing policies such as in-filling and mixed land functions to use existing developed land more efficiently. Local and state governments shall stimulate recycling efforts by such methods as increasing refuse collection fees and establishing local recycling centers.

The impacts resulting from the combustion of fossil fuels used to generate electricity shall be mitigated in part by use of BACT and off-set requirements. The EPA and other agencies have guidelines and regulations to ensure that significant adverse impacts are mitigated. Renewable energy production is itself a mitigation measure for the environmental impacts of energy production from conventional sources. More efficient residential and commercial appliances and processes will help mitigate some of the impacts associated with increased demand for natural gas. The appliances could be required of new development whenever feasible.

Risk of Upset

Impacts from add-on control devices shall be mitigated by strict enforcement of design, operation, and maintenance standards. Applicants or operators of these devices must comply with the requirements of various regulatory

agencies, including District BACT requirements. Impacts from these sources can be reduced to insignificance through regular inspection, monitoring, good housekeeping, and adhering to all appropriate federal, state, and local safety regulations and laws. Waste minimization shall be encouraged to reduce the impacts of waste disposal and storage.

Population

The Regional Housing Needs Assessment, as incorporated into local general plan housing elements, can assist in distributing housing and population shifts fairly among all of the jurisdictions affected by growth management, so that a small handful of communities do not drastically gain or forego population. Local plans shall be revised to anticipate changes to local infrastructure and service plans. In addition, neighborhood disruption shall be minimized through careful transit route and transfer point designation, along with provision of adequate bus turn-outs and bus shelters and seating to discourage patrons from disturbing nearby private property.

Housing

Disincentives to produce low income and affordable housing under the "Mitigation Strategy" described above should be offset by the development of fee waivers, or by providing affordable housing incentives in locations more desirable from a jobs/housing balance point of view. Disincentives posed by the "Regulatory Strategy" can be reversed by subsidies for affordable and low income units, special density bonuses, or fee waivers for qualified projects. Finally, housing losses due to freeway construction shall be offset by housing replacement and relocation program in adjacent areas.

Transportation

Selecting appropriate routes for electrification shall be conducted with full coordination among local planning agencies and transit providers. In some

cases, this may require new route configurations to avoid conflicts with sensitive land uses and to avoid burdening neighborhoods with more intense traffic.

Local transit service should be improved to assist in controlling growth in non-work trips that might otherwise occur on free days or as a result of more flexible hours. Local governments and employers should offer incentives such as affordable housing and convenient local work centers to encourage employees to consider jobs/housing balance in their location decisions despite the reduced need to travel to a work base. In addition, local land use plans should provide for adequate bicycle and pedestrian options for short work trips, as well as mixed residential and commercial development.

Transit providers and local planning agencies shall work together to designate routes that will minimize neighborhood disruption. The demand for new routes can be controlled to some degree through interjurisdictional cooperation to ensure that job growth is distributed to areas most able to accommodate it. Increased local traffic due to new job growth can be offset by simultaneous provision of transit alternatives and ridesharing incentives, and transportation system management techniques including signal synchronization and parking management. Coordinating truck delivery schedules can further reduce truck accidents and congestion in areas experiencing heavy truck activity.

Public Services

Emergency response plans of local jurisdictions and businesses should be updated to handle the different risks presented by transportation and storage of methanol and other alternative fuels. Enforcement of proper handling, transit and storage requirements will also help mitigate the potential for upset for all alternative fuels.

Adequate public notice of the establishment of parking management and auto restriction zones, supplemented by clear, permanent public signing will help educate motorists to avoid these areas unless they qualify for access. This will relieve the need for additional police personnel to inform and direct motorists. Strong enforcement measures, including fines and towing, will emphasize the importance of parking and access restrictions and deter

potential violators, thus minimizing the number of officers needed for enforcement activities.

Local jurisdictions should help insure the proper type and amount of waste disposal facilities and services by coordinating with collection agencies and other jurisdictions that provide landfill capacity to site adequate new facilities near the growth in demand. In addition, local jurisdictions and school districts should cooperate to plan in advance for anticipated enrollments and needed facilities.

Energy

Load management and energy conservation measures should be used to help limit the amount of electricity required. Greater coordination between the Basin's electric utilities, local jurisdictions, and regulatory agencies will be required to ensure that additional generating capacity is added to permit timely implementation of extremely low-emitting technologies.

Energy-efficient afterburner design and waste heat recovery could decrease the demand for combustible fuels, thus decreasing both air pollutant emissions and the amount of energy consumed. On a macroscopic scale, load management techniques can help manage the existing energy supply more efficiently, and should be implemented whenever possible.

Increased efficiency of industrial processes can help mitigate some of the impacts from increased demand for natural gas. For the transportation sector, measures developed to decrease vehicle emissions by reducing travel distance and frequency will also help decrease the demand for alternative fuels.

Utilities

Utilities should implement utility load management programs, which can significantly reduce the need for generating capacity additions. Useful load management programs include thermal energy storage, equipment purchase incentives, and reducing peak use through conservation. Load management

techniques can also evenly distribute the demand for electricity throughout the day, make more efficient use of transmission lines, and make more efficient use of generating plants. Basin utilities shall also be encouraged to develop and install alternative energy sources such as solar, geothermal, or wind. Finally, cooperative agreements among regions for allocation of power, water, and non-renewable fuel resources could forestall competitive demands on these resources.

In order to conserve natural gas supplies, coal could be used to manufacture synthesized natural gas, and as a feedstock for methanol production. Impacts from these synfuel resources would occur outside the Basin at locations yet to be identified.

Recreation

Appropriate jurisdictions shall balance the need for urban areas with the need for open space for new and existing facilities.

Human Health

Mitigation measures for processes and operations switching from reactive solvents to exempt solvents are possible in cases where the substituted solvent is a carcinogen. Proposed Rules 223 and 1401, although they are not a part of the AQMP, would help mitigate adverse impacts due to increased emissions of toxics.

Measures to reduce the potential risk of upset can be taken to reduce the probability of exposure. Proper safety and handling procedures will also help mitigate the potential for adverse health effects. Ammonia slip from faulty SCR design can also be alleviated through proper maintenance and appropriate application of SCR technology.

Economic Impacts

Economic incentives alone will encourage most affected firms to select the least costly method of control in helping reduce the economic impact of regulation. Higher production costs in the short run will also stimulate the development of economical low-VOC coatings, solvents, and adhesives. The development of new products will tend to minimize the long-run economic impacts of the control measures.

A cooperative effort among the District, ARB, product manufacturers, and end users should be established to fully assess the constraints and options available for implementation of AQMP controls. The District has established a Technology Advancement Office to test and promote new technologies for air pollution control technologies that could be applied in the Basin.

A portion of the emission charges collected could be refunded to sources that have achieved emission levels below the specified cutoff level. Grants could also be awarded to companies that demonstrate the development of less polluting technology to reduce emissions even further. A cap could be placed on the total amount of emissions that can be applied for the payment of emission charges for each firm. Once that cap level is reached, emission reductions would be mandatory. This would also increase the likelihood of emission reductions. A phase-in schedule could also be adopted to ease financial hardship that may arise. Anticipated breakthroughs in technology may facilitate future emission reductions at lower costs.

To help reduce the initial capital cost impact of purchasing energy conservation devices, cash rebate programs of electric and gas utilities should be expanded. The Public Utilities Commission, which has regulatory authority over private gas and electric utilities, and those municipal governments that direct their own utilities, are encouraged to implement such programs. Reauthorization of tax credit programs should be considered by the state and federal governments.

Earth

Local jurisdictions can help mitigate the impacts of construction through zoning laws and by protection of open spaces.

Aesthetics

During all phases of AQMP implementation, community regulations shall be strictly adhered to regarding any aspects of development that may affect aesthetic values.

Archaeological/Paleontological/Historical

In the event that subsurface cultural resources are encountered during project construction, work shall be temporarily diverted until such materials have been evaluated and any necessary data recovery activities conducted. For existing structures that may have potential historical value, attempts should be made to preserve the site while developing the property in a manner generally commensurate with existing plans.

SECTION 8

CONCLUSION

Conclusion

CONCLUSION

As part of the AQMP regulatory process, the District has prepared an EIR consistent with state and District CEQA Guidelines. The CEQA guidelines require analysis of potential environmental impacts that may affect environmental quality in a number of specified environmental areas such as, but not limited to, air quality, water quality, public health, traffic and circulation, aesthetics, etc. The results of the modeling and analysis contained in the EIR and the AQMP itself indicate that the Basin will attain all state and federal ambient air quality standards. However, to achieve attainment a number of other environmental impacts were identified.

As required by CEQA, the AQMP EIR proposed and evaluated a number of alternative projects to determine if the goals of the AQMP, ie., attain all state and federal ambient air quality standards as mandated by the federal and state Clean Air Acts and the Health and Safety Code, could be achieved with fewer or less significant environmental impacts. The major components of each alternative are summarized in Section 4. To facilitate comparison of the alternatives (Table 8-1), the results and impacts associated with the proposed AQMP are considered to be the same for the Delayed Compliance Alternative, the Alternative Growth Scenario, and the Alternative Mobility Strategy because these alternatives are merely variations of the AQMP. In addition, it is probable that the Least Cost Alternative will require implementing all Tier I control measures and the majority of Tier II Control Measures. Therefore, results and impacts from this alternative are considered to be equivalent to those associated with the Tiers I and II Only Alternative. The No Project Alternative is not considered in Table 8-1.

TABLE 8-1

Summary Comparison of Alternatives

Project	Achieve AAQS[1]	Mitigatable Impacts	Unavoidable Impacts
Proposed AQMP	All	Yes	Yes
ROG Primarily A	None[2]	Yes	Yes
ROG Primarily B	CO Only[2]	Yes	Yes
Tiers I & II Only	All Except Ozone[2]	Yes	Yes
Additional Controls	All	Yes	Yes

[1] Ambient Air Quality Standards

[2] No alternative is projected to result in noncompliance with the lead and SO_2 AAQS.

Although Table 8-1 is an abstracted representation of the effects resulting from the proposed alternatives, two important pieces of information can be gained from it. First, there are only two alternatives that achieve all federal and state ambient air quality standards as required by state law, the AQMP and the Additional Control Effort Alternative. Therefore, no other alternatives are legally defensible AQMP alternatives because they do not demonstrate compliance with all federal or state ambient air quality standards. Second, the AQMP and all proposed alternatives produce environmental impacts in a number of areas. For example, all alternatives have, to a certain extent, secondary environmental impacts resulting from air pollution control equipment. Because most of the alternatives to the AQMP propose fewer control measures, these alternatives will have fewer secondary

impacts. The fact that these alternatives contain fewer control measures also accounts for the failure of these alternatives to meet th project objectives, ie., attainment of all ambient air quality standards.

In many cases, secondary environmental impacts can be mitigated to insignificance, especially those resulting from control equipment. Some impacts were identified, however, that cannot be mitigated to insignificance. For example, all alternatives will accelerate the consumption of nonrenewable energy supplies, particularly fossil fuels. Many of the control technologies, for example, require energy for their operation or as part of the control process. Because the AQMP contains a more extensive set of control measures than all other alternatives, except for the Additional Control Effort Alternative, it is probable that it will result in more unavoidable environmental impacts. However, the December 1988 AQMP EIR and the 1988 Addendum contain a substantial number of mitigation measures that will lessen potential unavoidable environmental impacts. Additionally, as the District develops each control measure into a particular rule in the future, appropriate environmental assessments will be performed that identify all feasible mitigation measures.

Only two of the proposed projects satisfy mandated AQMP requirements, the AQMP and the Additional Control Effort Alternative. Since both of these proposals attain all mandated ambient air quality standards, the proposed AQMP is considered the better of the two alternatives because it should cause fewer unavoidable environmental impacts.

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